OfficeConnect®

Wireless 11g Cable/DSL Gateway User Guide

3CRWE554G72

The Standard for Wireless Fidelity.

http://www.3com.com/

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About This Guide

This guide describes how to install and configure the OfficeConnect Wireless 11g Cable/DSL Gateway (3CRWE554G72).

This guide is intended for use by those responsible for installing and setting up network equipment; consequently, it assumes a basic working knowledge of LANs (Local Area Networks) and Internet gateway systems.

If a release note is shipped with the OfficeConnect Wireless 11g Cable/DSL Gateway and contains information that differs from the information in this guide, follow the information in the release note.

Most user guides and release notes are available in Adobe Acrobat Reader Portable Document Format (PDF) on the 3Com World Wide Web site:

http://www.3com.com

Naming Convention

Throughout this guide, the OfficeConnect Wireless 11g Cable/DSL Gateway is referred to as the "Gateway".

Category 3 and Category 5 Twisted Pair Cables are referred to as Twisted Pair Cables throughout this guide.

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Conventions

Table 1 and Table 2 list conventions that are used throughout this guide.

Table 1 Notice Icons

Icon	Notice Type	Description
	Information note	Information that describes important features or instructions.
	Caution	Information that alerts you to potential loss of data or potential damage to an application, system, or device.
	Warning	Information that alerts you to potential personal injury.

Table 2 Text Conventions

Convention	Description
The words "enter" and "type"	When you see the word "enter" in this guide, you must type something, and then press Return or Enter. Do not press Return or Enter when an instruction simply says "type."
Keyboard key names	If you must press two or more keys simultaneously, the key names are linked with a plus sign (+). Example: Press Ctrl+Alt+Del
Words in *italics*	Italics are used to: ■ Emphasize a point. ■ Denote a new term at the place where it is defined in the text. ■ Identify menu names, menu commands, and software button names. Examples: From the *Help* menu, select *Contents*. Click *OK*.

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Example:

- OfficeConnect Wireless 11g Cable/DSL Gateway User Guide
- Part Number DUA0055-4AAA01
- Page 24

Do not use this e-mail address for technical support questions. For information about contacting Technical Support, please refer to the Support and Safety Information sheet.

Related Documentation

In addition to this guide, each Gateway document set includes one Installation Guide. This guide contains the instructions you need to install and configure your Gateway.

Product Registration

You can now register your Gateway on the 3Com web site and receive up-to-date information on your product:

`http://www.3com.com/register/`

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1 INTRODUCING THE GATEWAY

Welcome to the world of networking with 3Com®. In the modern business environment, communication and sharing information is crucial. Computer networks have proved to be one of the fastest modes of communication but, until recently, only large businesses could afford the networking advantage. The OfficeConnect® product range from 3Com has changed all this, bringing networks to the small office.

The products that compose the OfficeConnect range give you, the small office user, the same power, flexibility, and protection that has been available only to large corporations. Now, you can network the computers in your office, connect them all to a single Internet outlet, and harness the combined power of all of your computers.

OfficeConnect Wireless 11g Cable/DSL Gateway

The OfficeConnect Wireless 11g Cable/DSL Gateway is designed to provide a cost-effective means of sharing a single broadband Internet connection amongst several wired and wireless computers. The Gateway also provides protection in the form of an electronic "firewall" preventing anyone outside of your network from seeing your files or damaging your computers. The Gateway can also prevent your users from accessing Web sites which you find unsuitable.

Figure 1 shows an example network without a Gateway. In this network, only one computer is connected to the Internet. This computer must always be powered on for the other computers on the network to access the Internet.

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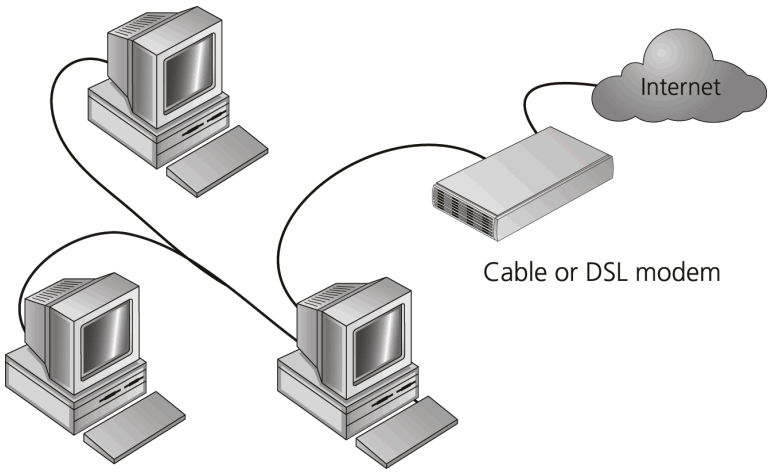
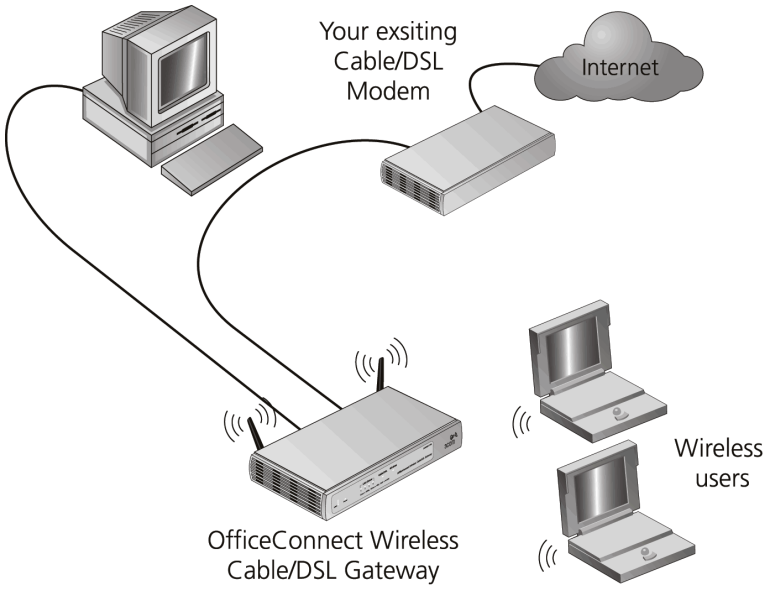
Figure 1 Example Network Without a Gateway



When you use the Gateway in your network (Figure 2), it becomes your connection to the Internet. Connections can be made directly to the Gateway, or to an OfficeConnect Switch or Hub, expanding the number of computers you can have in your network.

Figure 2 Example Network Using a Wireless Cable/DSL Gateway



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Gateway Advantages

The advantages of the Gateway include:

- Shared Internet connection for both wired and wireless computers
- High speed 802.11g wireless networking
- No need for a dedicated, "always on" computer serving as your Internet connection
- Cross-platform operation for compatibility with Windows, Unix and Macintosh computers
- Easy-to-use, Web-based setup and configuration
- Provides centralization of all network address settings (DHCP)
- Acts as a Virtual server to enable remote access to Web, FTP, and other services on your network
- Security — Firewall protection against Internet hacker attacks and encryption to protect wireless network traffic
- Filtered access of inappropriate Web sites using the built-in URL filter

Package Contents

The Gateway kit includes the following items:

- One OfficeConnect Wireless 11g Cable/DSL Gateway
- One power adapter for use with the Gateway
- Four rubber feet
- One Ethernet cable
- One CD-ROM containing the Gateway Discovery program and this User Guide
- Installation Guide
- One Support and Safety Information Sheet
- One Warranty Flyer

If any of these items are missing or damaged, please contact your retailer.

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Minimum System and Component Requirements

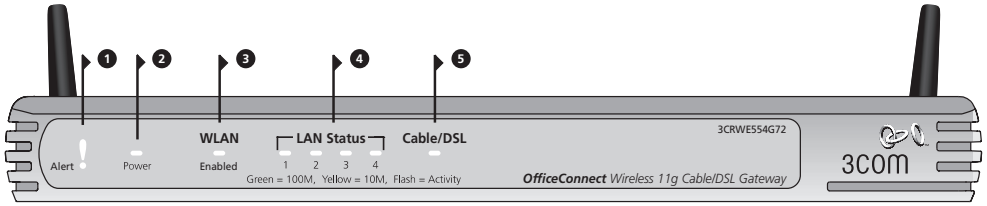
Your Gateway requires that the computer(s) and components in your network be configured with at least the following:

- A computer with an operating system that supports TCP/IP networking protocols (for example Windows 95/98/NT/Me/2000/XP, Unix, Mac OS 8.5 or higher).
- An Ethernet 10Mbps or 10/100 Mbps NIC for each computer to be connected to the four-port switch on your Gateway.
- An 802.11b or 802.11g wireless NIC.
- A cable modem or DSL modem with an Ethernet port (RJ-45 connector).
- An active Internet access account.
- A Web browser that supports JavaScript, such as Netscape 4.7 or higher, Internet Explorer 5.0 or higher, or Mozilla 1.2.1 or higher.

Front Panel

The front panel of the Gateway contains a series of indicator lights (LEDs) that help describe the state of various networking and connection operations.

Figure 3 Gateway - Front Panel



1 Alert LED

Orange

Indicates a number of different conditions, as described below.

Off - The Gateway is operating normally.

Flashing quickly - Indicates one of the following conditions:

- The Gateway has just been started up and is running a self-test routine, or

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- The administrator has invoked the *Reset to Factory Defaults* command, or
- The system software is in the process of being upgraded

In each of these cases, wait until the Gateway has completed the current operation and the alert LED is Off.

Flashing slowly - The Gateway has completed the *Reset to Factory Defaults* process, and is waiting for you to reset the unit. To do this, remove power, wait 10 seconds and then re-apply power. The Gateway will then enter the start-up sequence and resume normal operation.

If you have used a cable to reset the unit to Factory Defaults, follow steps 5 to 7 in "Forgotten Password and Reset to Factory Defaults" *on page 85*.

On for 2 seconds, and then off - The Gateway has detected and prevented a hacker from attacking your network from the Internet.

Continuously on - A fault has been detected with your Gateway during the start-up process. Refer to Chapter 6 "Troubleshooting".

2 Power LED

Green

Indicates that the Gateway is powered on.

3 Wireless LAN (WLAN) Status LED

Yellow

If the LED is on it indicates that wireless networking is enabled. If the LED is flashing, data is being transmitted or received. If the LED is off, the Wireless LAN has been disabled in the Gateway, or there is a problem. Refer to Chapter 6 "Troubleshooting".

4 Four LAN Status LEDs

Green (100Mbps link) / yellow (10Mbps link)

If the LED is on, the link between the port and the next piece of network equipment is OK. If the LED is flashing, the link is OK and data is being transmitted or received. If the LED is off, nothing is connected, the connected device is switched off, or there is a problem with the connection (refer to Chapter 6 "Troubleshooting"). The port will automatically adjust to the correct speed and duplex.

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5 Cable/DSL Status LED

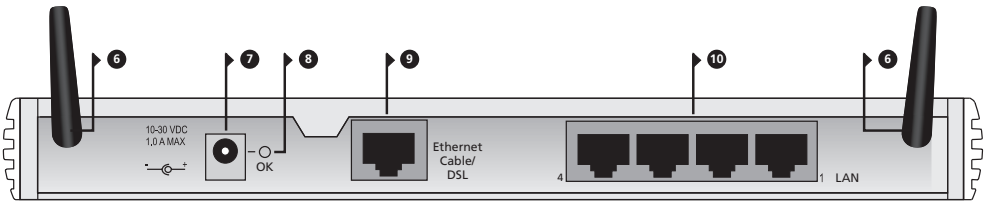
Green (100Mbps link) / yellow (10Mbps link)

If the LED is on, the link between the Gateway and the cable or DSL modem is OK. If the LED is flashing, the link is OK and data is being transmitted or received. If the LED is off, nothing is connected, the modem is switched off or there is a problem (refer to Chapter 6 "Troubleshooting").

Rear Panel

The rear panel (Figure 4) of the Gateway contains four LAN ports, one Ethernet Cable/DSL port, a power adapter OK LED, and a power adapter socket.

Figure 4 Gateway - Rear Panel



6 Wireless Antennae

The antennae on the product should be placed in a 'V' position when initially installed.

CAUTION: *Do not force the antennae beyond their mechanical stops. Rotating the antennae further may cause damage.*

7 Power Adapter Socket

Only use the power adapter supplied with this Gateway. Do not use any other adapter.

8 Power Adapter OK LED

Green

Indicates that the power adapter is supplying power to the Gateway. If the LED is off, there may be a problem with the power adapter or adapter cable.

9 Ethernet Cable/DSL port

Use the supplied patch cable to connect the Gateway to the Ethernet port on your cable or DSL modem. The port will automatically adjust to the correct speed and duplex, and will set itself to MDI or MDIX

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depending on the device to which they are connected and the type of cable used.

10 Four 10/100 LAN ports

Using suitable RJ-45 cable, you can connect your Gateway to a computer, or to any other piece of equipment that has an Ethernet connection (for example, a hub or a switch). The LAN ports will automatically set themselves to MDI or MDIX depending on the device to which they are connected and the type of cable used.

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2 HARDWARE INSTALLATION

Introduction

This chapter will guide you through a basic installation of the Gateway, including:

- Connecting the Gateway to the Internet.
- Connecting the Gateway to your network.
- Setting up your computers for networking with the Gateway.

Safety Information

WARNING: *Please read the "Safety Information" section in Appendix D before you start.*

VORSICHT: *Bitte lesen Sie den Abschnitt "Wichtige Sicherheitshinweise" sorgfältig durch, bevor Sie das Gerät einschalten.*

AVERTISSEMENT: *Veuillez lire attentivement la section "Consignes importantes de sécurité" avant de mettre en route.*

Positioning the Gateway

You should place the Gateway in a location that:

- is conveniently located for connection to the cable or DSL modem that will be used to connect to the Internet.
- is centrally located to the wireless computers that will connect to the Gateway. A suitable location might be on top of a high shelf or similar furniture to optimize wireless connections to computers in both horizontal and vertical directions, allowing wider coverage.
- allows convenient connection to the computers that will be connected to the four LAN ports on the rear panel, if desired.
- allows easy viewing of the front panel LED indicator lights, and access to the rear panel connectors, if necessary.

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When positioning your Gateway, ensure:

- It is out of direct sunlight and away from sources of heat.
- Cabling is away from power lines, fluorescent lighting fixtures, and sources of electrical noise such as radios, transmitters and broadband amplifiers.
- Water or moisture cannot enter the case of the unit.
- Air flow around the unit and through the vents in the side of the case is not restricted. 3Com recommends you provide a minimum of 25 mm (1 in.) clearance.

Using the Rubber Feet

Use the four self-adhesive rubber feet to prevent your Gateway from moving around on your desk or when stacking with other flat top OfficeConnect units. Only stick the feet to the marked areas at each corner of the underside of your Gateway.

Wall Mounting

There are two slots on the underside of the Gateway that can be used for wall mounting.

When wall mounting the unit, ensure that it is within reach of the power outlet.

You will need two suitable screws to wall mount the unit. To do this:

1. Ensure that the wall you use is smooth, flat, dry and sturdy and make two screw holes which are 150 mm (5.9 in.) apart.
2. Fix the screws into the wall, leaving their heads 3 mm (0.12 in.) clear of the wall surface.
3. Remove any connections to the unit and locate it over the screw heads. When in line, gently push the unit on to the wall and move it downwards to secure.

When making connections, be careful not to push the unit up and off the wall.

CAUTION: *Only wall mount single units, do not wall mount stacked units.*

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Before you Install your Gateway

Before you install and configure your Gateway, you need the following additional information. If you do not have this information, contact your Internet Service Provider (ISP). Space is provided below for you to record this information.

If you have a DSL connection and your ISP allocates IP information dynamically over PPPoE, you need a User Name and Password:

PPPoE User Name : _____

PPPoE Password : _____

PPPoE Service Name : _____

If you have a DSL connection and your ISP allocates IP information dynamically over PPTP, you need a User Name, Password and PPTP Server Address:

PPTP User Name : _____

PPTP Password : _____

PPTP Server Address : ____.____.____.____

You only need a PPPoE Service Name if your ISP requires one. Do not enter anything if your ISP does not require this information.

If your ISP allocates fixed or static IP information, you need the following information:

IP Address : ____.____.____.____

Subnet Mask : ____.____.____.____

Default Gateway address : ____.____.____.____

DNS address : ____.____.____.____

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If your ISP allocates IP information dynamically over a protocol other than PPPoE, you do not need any further information. This configuration is typical of cable connections.

Powering Up the Gateway

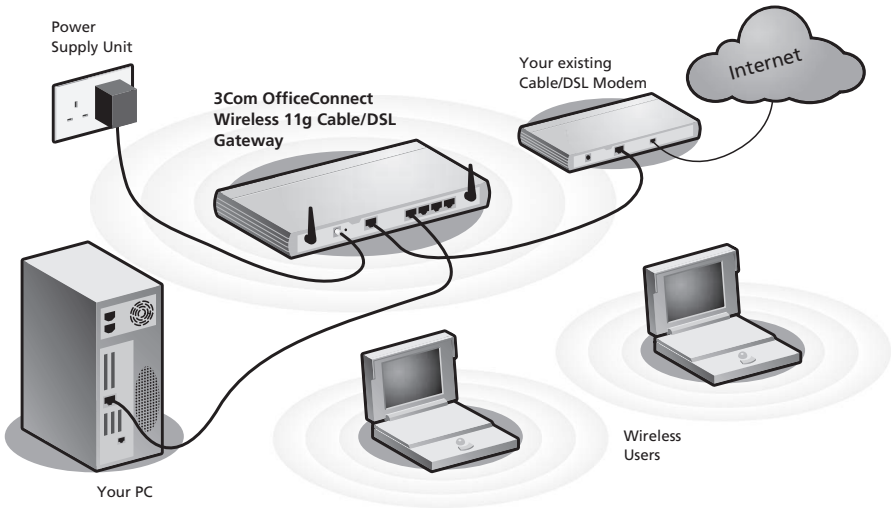
To power up the Gateway:

1. Plug the power adapter into the power adapter socket located on the back panel of the Gateway.
2. Plug the power adapter into a standard electrical wall socket.

Connecting the Gateway

The first step for installing your Gateway is to physically connect it to a cable or DSL modem and then connect it to a computer in order to be able to access the Internet. See Figure 5:

Figure 5 Connecting the Gateway



To use your Gateway to connect to the Internet through an external cable or DSL modem:

1. Insert one end of the supplied Ethernet (RJ-45 Category 5) cable into the Cable/DSL port on the rear panel of the Gateway.
2. Insert the other end of the cable into the RJ-45 port on your cable or DSL modem. Check that the Cable/DSL status LED lights on the Gateway.
3. Connect the cable or DSL modem to the Internet.

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4 Connect your computer to one of the four LAN ports on the Gateway using a twisted pair cable. Check that the corresponding LAN status LED on the Gateway lights.

You have now completed the hardware installation of your Gateway. Next you need to set up your computers so that they can make use of the Gateway to communicate with the Internet.

3Com recommends that you perform the initial Gateway configuration from a computer that is directly connected to one of the LAN ports.

If you configure the Gateway from a wireless computer, note that you may lose contact with the Gateway if you change the wireless configuration.

To communicate wirelessly with your Gateway, your wireless NIC should be set as follows:

- Encryption — none
- Service Area Name/SSID — 3Com
- Channel — 11

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3 Setting Up Your Computers

The Gateway has the ability to dynamically allocate network addresses to the computers on your network, using DHCP. However, your computers need to be configured correctly for this to take place. To change the configuration of your computers to allow this, follow the instructions in this chapter. If your computers are configured with fixed or static addresses and you do not wish to change this, then you should use the Discovery program on the Gateway CD-ROM to detect and configure your Gateway. Refer to Appendix A for information on using the Discovery program.

Obtaining an IP Address Automatically

Windows 2000

If you are using a Windows 2000-based computer, use the following procedure to change your TCP/IP settings:

1. From the Windows *Start* Menu, select *Settings* > *Control Panel*.
2. Double click on *Network and Dial-Up Connections*.
3. Double click on *Local Area Connection*.
4. Click on *Properties*.
5. A screen similar to Figure 6 should be displayed. Select *Internet Protocol TCP/IP* and click on *Properties*.

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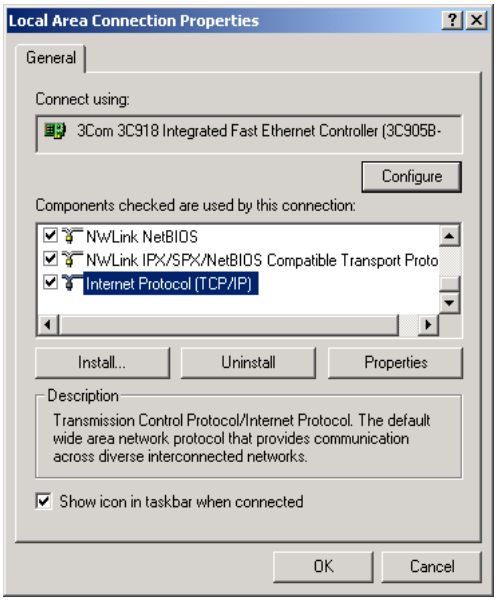
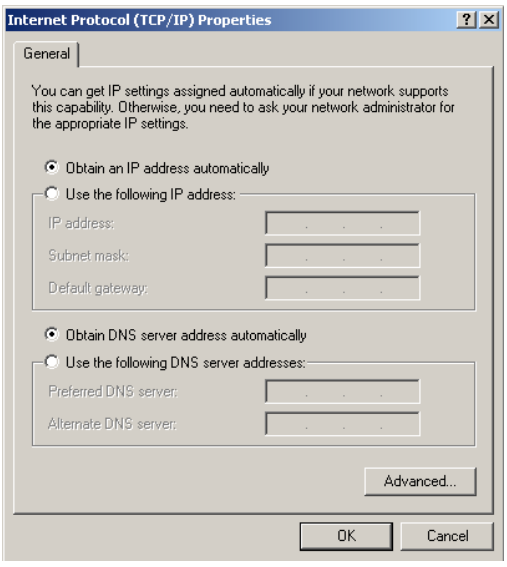
Figure 6 Local Area Properties Screen



6 Ensure that the options *Obtain an IP Address automatically*, and *Obtain DNS server address automatically* are both selected as shown in Figure 7. Click *OK*.

Figure 7 Internet Protocol (TCP/IP) Properties Screen


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
Subnet mask:
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

7 Restart your computer.

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Windows XP

1. From the Windows *Start* menu, select *Control Panel*.
2. Click on *Network and Internet Connections*.
3. Click on the *Network Connections* icon.
4. Double click on *LAN* or *High Speed Connection* icon. A screen titled *Local Area Connection Status* will appear.
5. Select *Internet Protocol TCP/IP* and click on *Properties*.
6. Ensure that the options *Obtain an IP Address automatically*, and *Obtain DNS servers automatically* are both selected. Click *OK*.
7. Restart your computer.

Windows 95/98/ME

1. From the Windows *Start* Menu, select *Settings* > *Control Panel*.
2. Double click on *Network*. Select the *TCP/IP* item for your network card and click on *Properties*.
3. In the TCP/IP dialog, select the *IP Address* tab, and ensure that *Obtain IP address automatically* is selected. Click *OK*.

Macintosh

If you are using a Macintosh computer, use the following procedure to change your TCP/IP settings:

1. From the desktop, select *Apple Menu*, *Control Panels*, and *TCP/IP*.
2. In the *TCP/IP* control panel, set *Connect Via:* to "Ethernet".
3. In the TCP/IP control panel, set *Configure:* to "Using DHCP Server."
4. Close the *TCP/IP* dialog box, and save your changes.
5. Restart your computer.

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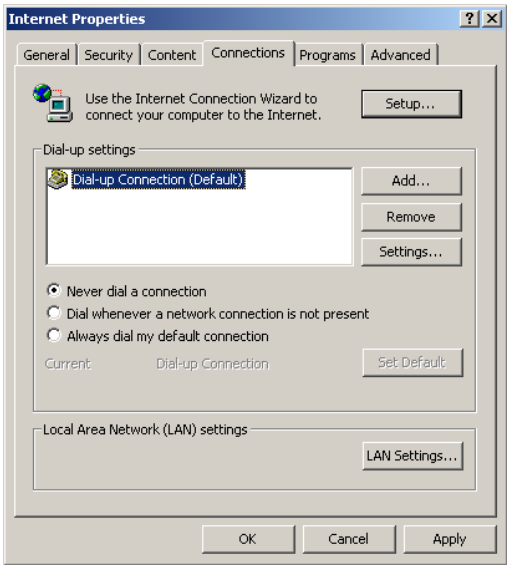
Disabling PPPoE and PPTP Client Software

If you have PPPoE or PPTP client software installed on your computer, you will need to disable it. To do this:

1. From the Windows *Start* menu, select *Settings* > *Control Panel*.
2. Double click on *Internet* Options.
3. Select the *Connections* Tab. A screen similar to Figure 8 should be displayed.
4. Select the *Never Dial a Connection* option.

Figure 8 Internet Properties Screen



You may wish to remove the PPPoE client software from your computer to free resources, as it is not required for use with the Gateway.

Disabling Web Proxy

Ensure that you do not have a web proxy enabled on your computer.

Go to the *Control Panel* and click on *Internet Options*. Select the *Connections* tab and click *LAN Settings* at the bottom. Make sure that the *Use Proxy Server* option is unchecked.

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4 Running the Setup Wizard

Accessing the Wizard

The Gateway setup program is Web-based, which means that it is accessed through your Web browser (Netscape Navigator 4.7 or higher, Internet Explorer 5.0 or higher, or Mozilla 1.2.1 or higher).

To use the Setup Wizard:

1. Ensure that you have at least one computer connected to the Gateway. Refer to Chapter 2 for details on how to do this.
2. Launch your Web browser on the computer.
3. Enter the following URL in the location or address field of your browser: **`http://192.168.1.1`** (Figure 9). The Login screen displays.

Figure 9 Web Browser Location Field (Factory Default)

4. To log in as an administrator, enter the password (the default setting is **`admin`**) in the *System Password* field and click *Log in* (Figure 10).

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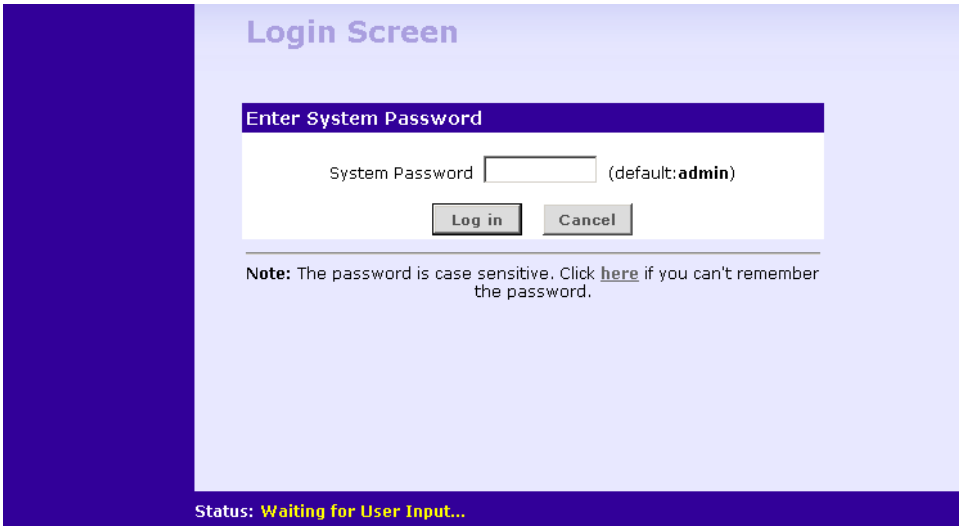
Figure 10 Gateway Login Screen



5 If the password is correct, the *Country Selection* screen will appear. Select the country you wish to configure the Gateway for, then click *Apply*. (Figure 11)

Figure 11 Country Selection Screen

Country Selection
Country Selection
Country Selection
Please select a country to configure the Gateway for your location:
Select Country...
Apply
Warning: After applying this setting you will only be able to change it by resetting the Gateway to Factory Defaults.
Status: Waiting for User Input...

6 When you have selected a country either:

- The *Welcome* screen will appear (Figure 12). Select the *Wizard* tab and click *Wizard.*

  or

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- If your Gateway has not been configured before, the Wizard will launch automatically (refer to Figure 13).

7 Click *Next*.

8 You will be guided step by step through a basic setup procedure.

Figure 12 Welcome Screen

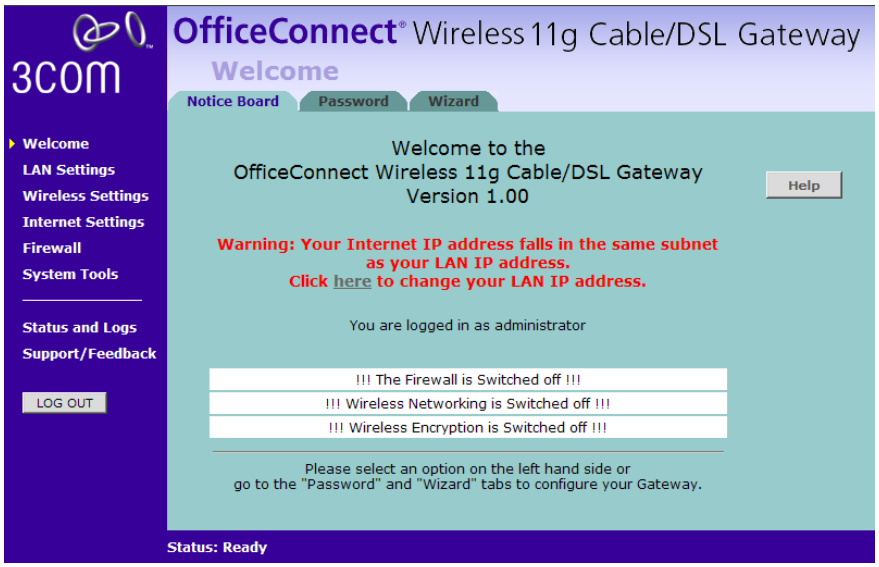
3com
OfficeConnect® Wireless 11g Cable/DSL Gateway
Welcome
Notice Board
Password
Wizard
Welcome
LAN Settings
Wireless Settings
Internet Settings
Firewall
System Tools
Status and Logs
Support/Feedback
LOG OUT
Welcome to the
OfficeConnect Wireless 11g Cable/DSL Gateway
Version 1.00
Help
Warning: Your Internet IP address falls in the same subnet as your LAN IP address.
Click here to change your LAN IP address.
You are logged in as administrator
!!! The Firewall is Switched off !!!
!!! Wireless Networking is Switched off !!!
!!! Wireless Encryption is Switched off !!!
Please select an option on the left hand side or
go to the "Password" and "Wizard" tabs to configure your Gateway.
Status: Ready

Figure 13 Wizard Screen

Gateway Configuration Wizard
This Wizard will help you quickly configure your Gateway to access the Internet. Once completed, you can use the left hand menu to access more configuration options. Please see the User Guide for further details.
To complete the Wizard you will need to know the information provided by your ISP, eg IP addresses, Usernames etc. If you are missing any information please contact your ISP.
Next>>
Cancel

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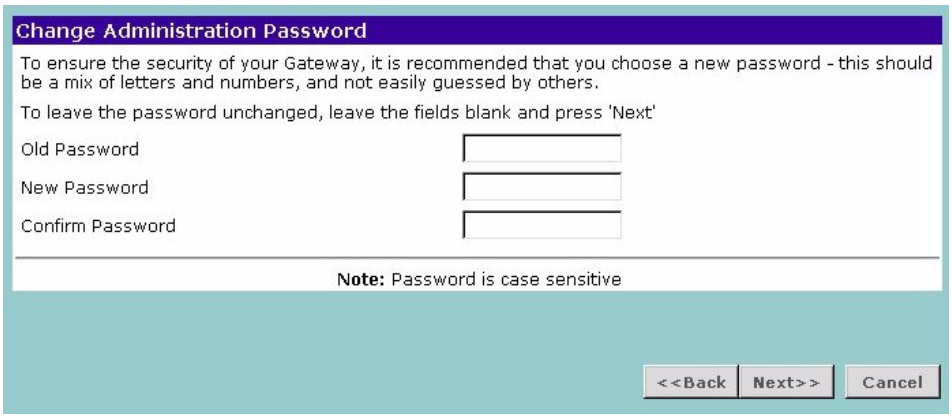
Password

Figure 14 Change Administration Password Screen


Change Administration Password
To ensure the security of your Gateway, it is recommended that you choose a new password - this should be a mix of letters and numbers, and not easily guessed by others.
To leave the password unchanged, leave the fields blank and press 'Next'
Old Password
New Password
Confirm Password
Note: Password is case sensitive
<<Back
Next>>
Cancel

When the *Change Administration Password* screen (Figure 14) appears, type the *Old Password*, then a new password in both the *New Password* and *Confirm Password* boxes.

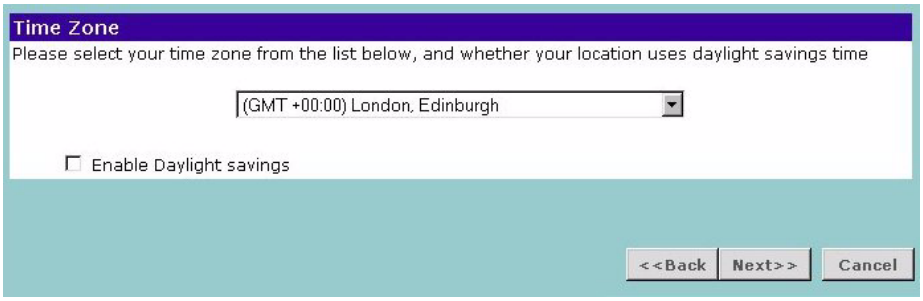
3Com recommends entering a new password when setting up the Gateway for the first time. The Gateway is shipped from the factory with a default password, **admin**.

1. *Password is case sensitive.*
2. *Write the new password down and keep it in a safe place, so that you can change your settings in the future.*

Click *Next* to display the *Time Zone* setup screen (Figure 15).

Time Zone

Figure 15 Time Zone Screen


Time Zone
Please select your time zone from the list below, and whether your location uses daylight savings time
(GMT +00:00) London, Edinburgh
Enable Daylight savings
<<Back
Next>>
Cancel

Select your time zone from the pull-down menu, check the daylight savings option if required, and then click *Next*.

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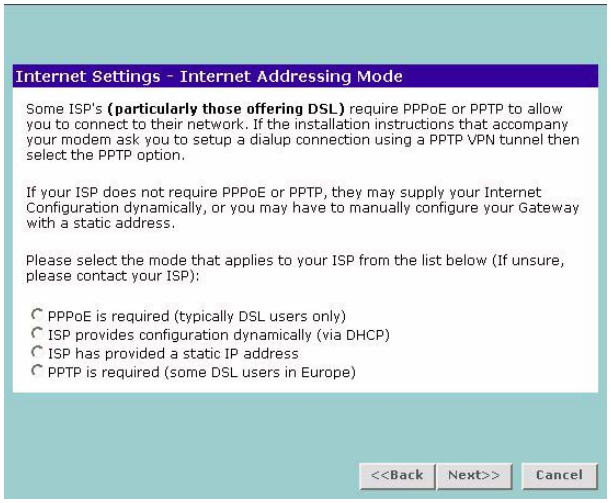
The Daylight Savings option advances the system clock by one hour. It does not cause the system clock to be updated for daylight savings time automatically.

WAN Settings

Figure 16 Internet Settings Screen


Internet Settings - Internet Addressing Mode
Some ISP's (particularly those offering DSL) require PPPoE or PPTP to allow you to connect to their network. If the installation instructions that accompany your modem ask you to setup a dialup connection using a PPTP VPN tunnel then select the PPTP option.
If your ISP does not require PPPoE or PPTP, they may supply your Internet Configuration dynamically, or you may have to manually configure your Gateway with a static address.
Please select the mode that applies to your ISP from the list below (If unsure, please contact your ISP):
PPPoE is required (typically DSL users only)
ISP provides configuration dynamically (via DHCP)
ISP has provided a static IP address
PPTP is required (some DSL users in Europe)
<<Back
Next>>
Cancel

This *Internet Addressing Mode* window allows you to set up the Gateway for the type of Internet connection you have. Before setting up your Internet connection mode, have the modem setting information from your ISP ready.

Select an Internet Addressing mode from the following:

- PPPoE is required (typically DSL users only) see page 34
- ISP provides configuration dynamically (via DHCP) see page 35
- ISP has provided a static IP address see page 36
- PPTP is required (some DSL users in Europe) see page 37

and click *Next*.

For further information on selecting a mode see "Internet Settings" on page 57.

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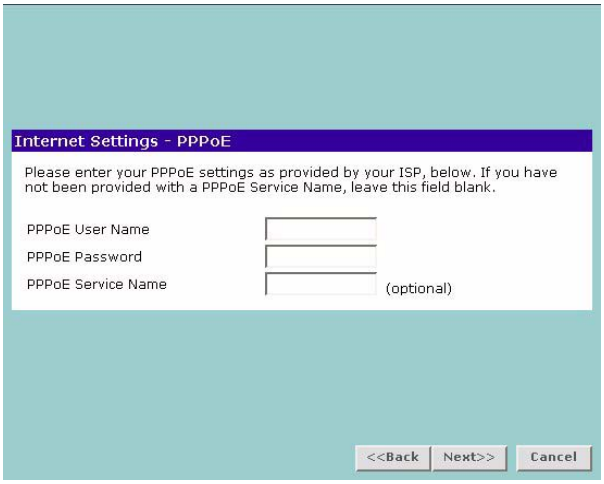
PPPoE Mode

Figure 17 PPPoE Screen


Internet Settings - PPPoE
Please enter your PPPoE settings as provided by your ISP, below. If you have not been provided with a PPPoE Service Name, leave this field blank.
PPPoE User Name
PPPoE Password
PPPoE Service Name
(optional)
<<Back
Next>>
Cancel

To setup the gateway for use with a PPP over Ethernet (PPPoE) connection, use the following procedure:

1. Enter your PPP over Ethernet user name in the *PPPoE User Name* text box.
2. Enter your PPP over Ethernet password in the *PPPoE Password* text box.
3. Enter your PPP over Ethernet service name in the *PPPoE Service Name* text box.

   This is optional. Not all ISPs require a PPPoE service name.

   Do not enter anything in this box if your ISP does not require a service name.
4. Check all of your settings, and then click *Next*. Refer to "LAN Settings" on page 38 for more information.

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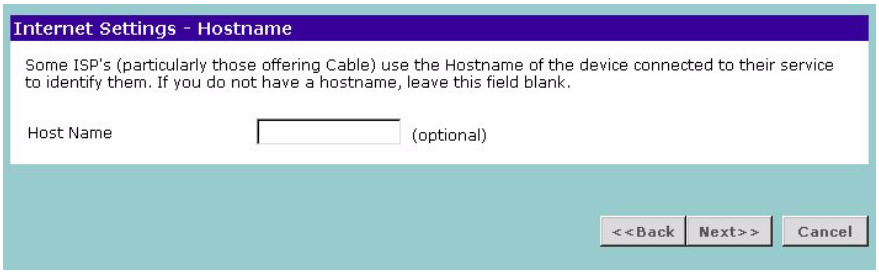
Dynamic IP Address Mode

To setup the Gateway for use with a dynamic IP address connection:

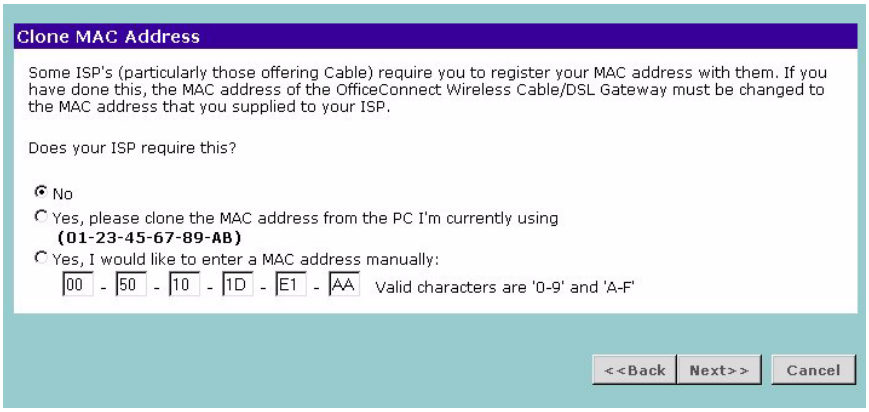
1 Select the *ISP provides configuration dynamically (via DHCP)* and then click *Next*. See Figure 16.

Figure 18 Hostname Screen


Internet Settings - Hostname
Some ISP's (particularly those offering Cable) use the Hostname of the device connected to their service to identify them. If you do not have a hostname, leave this field blank.
Host Name
(optional)
<<Back
Next>>
Cancel

2 Some ISPs require a host name. If your ISP has this requirement, enter the host name in the *Host Name* text box (Figure 18) and click *Next*. The Clone MAC Address screen displays.

Figure 19 Clone MAC Address Screen


Clone MAC Address
Some ISP's (particularly those offering Cable) require you to register your MAC address with them. If you have done this, the MAC address of the OfficeConnect Wireless Cable/DSL Gateway must be changed to the MAC address that you supplied to your ISP.
Does your ISP require this?
No
Yes, please clone the MAC address from the PC I'm currently using
(01-23-45-67-89-AB)
Yes, I would like to enter a MAC address manually:
00 - 50 - 10 - 1D - E1 - AA
Valid characters are '0-9' and 'A-F'
<<Back
Next>>
Cancel

3 If your ISP requires an assigned MAC address, select *Yes, I would like to enter a MAC address manually* and enter the values for a MAC address if required (Figure 19). If the computer you are now using is the one that was previously connected directly to the cable modem, choose *Yes, please clone the MAC address from the PC I'm currently using.*

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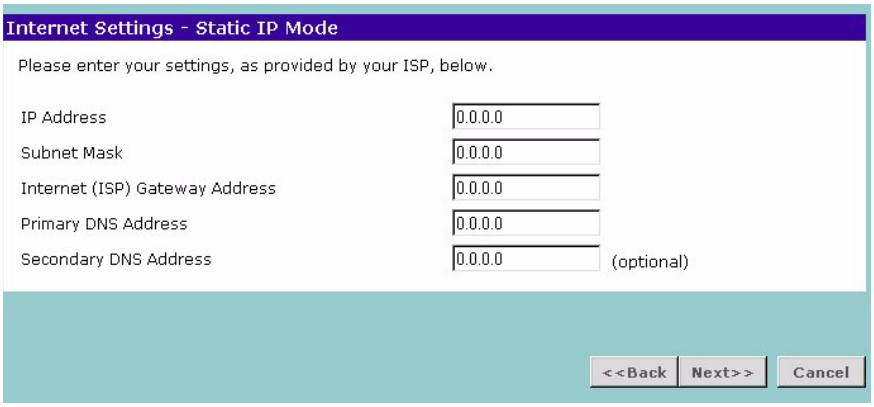
Static IP Mode

To setup the Gateway for use with a static IP address connection, use the following procedure:

1 Select *ISP has provided a static IP address,* (see Figure 16) and then click *Next.* Figure 20 displays.

Figure 20 Static IP Mode Screen



2 Enter your IP Address in the *IP Address* text box.

3 Enter your subnet mask in the *Subnet Mask* text box.

4 Enter your ISP gateway address in the *Internet (ISP) Gateway Address* text box.

5 Enter your primary DNS address in the *Primary DNS Address* text box.

6 Enter your secondary DNS address in the *Secondary DNS Address* text box.

This step is optional. Not all ISPs require a secondary DNS address.

7 Check all of your settings, and then click *Next*.

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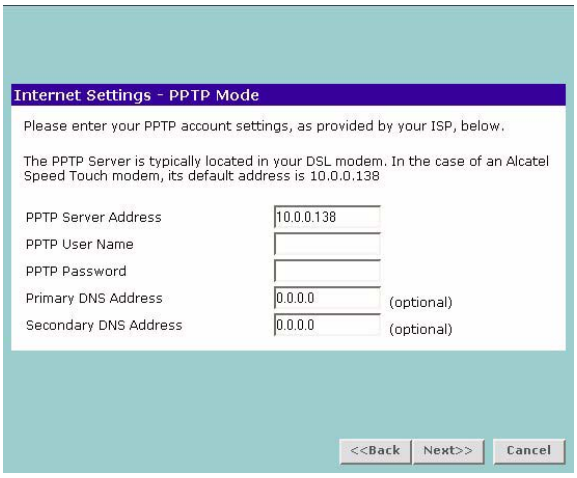
PPTP Mode

Figure 21 PPTP Mode Screen

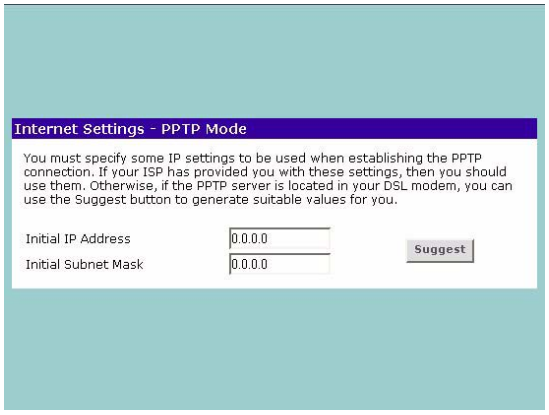

Internet Settings - PPTP Mode
Please enter your PPTP account settings, as provided by your ISP, below.
The PPTP Server is typically located in your DSL modem. In the case of an Alcatel Speed Touch modem, its default address is 10.0.0.138
PPTP Server Address
10.0.0.138
PPTP User Name
PPTP Password
Primary DNS Address
0.0.0.0
(optional)
Secondary DNS Address
0.0.0.0
(optional)
<<Back
Next>>
Cancel

To setup the gateway for use with a PPTP connection, use the following procedure:

1. Enter your PPTP server address in the *PPTP Server Address* text box.
2. Enter your PPTP user name in the *PPTP User Name* text box.
3. Enter your PPTP password in the *PPTP Password* text box.
4. Enter your *Primary DNS Address* and *Secondary DNS address*.

   Your ISP may provide you with primary and secondary DNS addresses. If they have been provided, enter the addresses in the appropriate text boxes. If not, leave *0.0.0.0* in the boxes.
5. Check all of your settings, and then click *Next*. Figure 22 displays.

Figure 22 PPTP IP Settings


Internet Settings - PPTP Mode
You must specify some IP settings to be used when establishing the PPTP connection. If your ISP has provided you with these settings, then you should use them. Otherwise, if the PPTP server is located in your DSL modem, you can use the Suggest button to generate suitable values for you.
Initial IP Address
0.0.0.0
Initial Subnet Mask
0.0.0.0
Suggest

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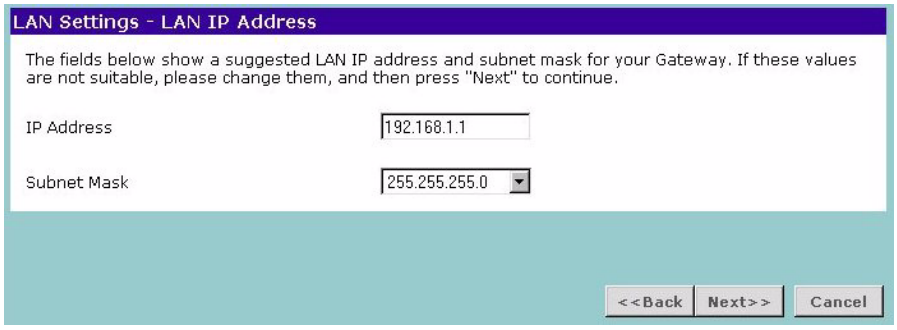
6 IP settings must be used when establishing a PPTP connection. Fill in the *Initial IP Address* and the *Initial Subnet Mask* fields if your ISP has provided you with these settings. Alternatively, if the PPTP server is located in your DSL modem, click *Suggest* to select an IP address on the same subnet as the PPTP server.

LAN Settings

Figure 23 LAN IP Address Screen

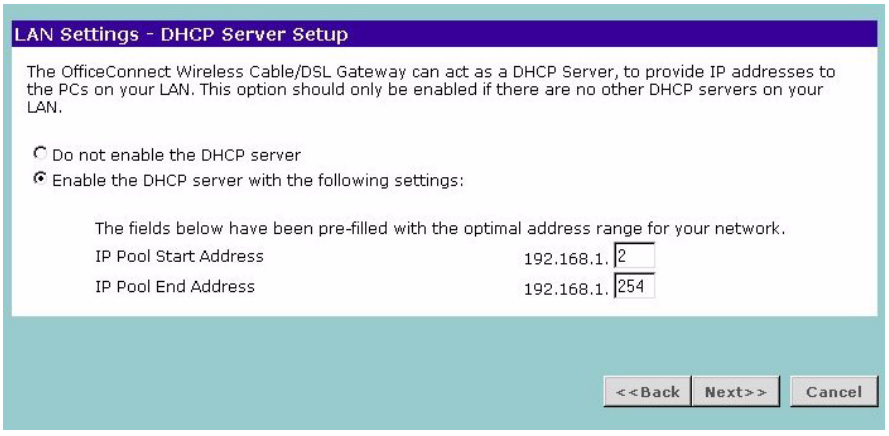

LAN Settings - LAN IP Address
The fields below show a suggested LAN IP address and subnet mask for your Gateway. If these values are not suitable, please change them, and then press "Next" to continue.
IP Address
192.168.1.1
Subnet Mask
255.255.255.0
<<Back
Next>>
Cancel

This screen displays a suggested LAN IP address and subnet mask of the Gateway. It also allows you to change the IP address and subnet mask.

DHCP

The Gateway contains a Dynamic Host Configuration (DHCP) server that can automatically configure the TCP/IP settings of every computer on your network.

Figure 24 DHCP Server Setup Screen


LAN Settings - DHCP Server Setup
The OfficeConnect Wireless Cable/DSL Gateway can act as a DHCP Server, to provide IP addresses to the PCs on your LAN. This option should only be enabled if there are no other DHCP servers on your LAN.
Do not enable the DHCP server
Enable the DHCP server with the following settings:
The fields below have been pre-filled with the optimal address range for your network.
IP Pool Start Address
192.168.1. 2
IP Pool End Address
192.168.1. 254
<<Back
Next>>
Cancel

To activate the DHCP Server option, select *Enable the DHCP server with the following settings:* and specify the IP pool range. The largest available continuous IP pool will be automatically entered; if this is not appropriate,

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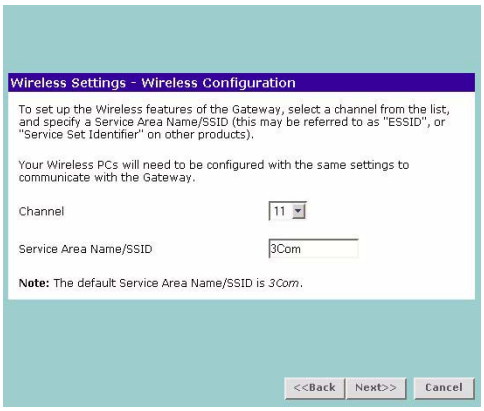
make your required changes. To disable DHCP, select *Do not enable the DHCP server.* Click *Next* when you have finished.

Wireless Settings

Figure 25 Wireless Configuration Screen


Wireless Settings - Wireless Configuration
To set up the Wireless features of the Gateway, select a channel from the list, and specify a Service Area Name/SSID (this may be referred to as "ESSID", or "Service Set Identifier" on other products).
Your Wireless PCs will need to be configured with the same settings to communicate with the Gateway.
Channel
11
Service Area Name/SSID
3Com
Note: The default Service Area Name/SSID is 3Com.
<<Back
Next>>
Cancel

This screen displays the Channel and Service Area Name. It also allows you to change these settings. There are a maximum of 14 channels, the number available to you is dependent on the country you reside in. Selecting *Clear Channel Select* allows the Gateway to automatically select an available channel when first powered on.

The Service Area Name default for 3Com products is "3Com". Up to 32 (case sensitive) characters can be entered for the Service Area Name.

3Com strongly recommends that you change the SSID to something other than the default.

If you are configuring the Gateway from a wireless computer any changes you make to the wireless configuration will result in communication between the Gateway and your computer being lost. This is why 3Com strongly recommends that you configure the Gateway from a wired computer.

It is very important that you set up your wireless clients to use the same Service Area Name or SSID as the one you use on this screen. If your clients use a different Service Area Name then they will not be able to communicate with the Gateway.

The choice of channel is less important as Clients will generally search all of the available channels. You should however make a note of the

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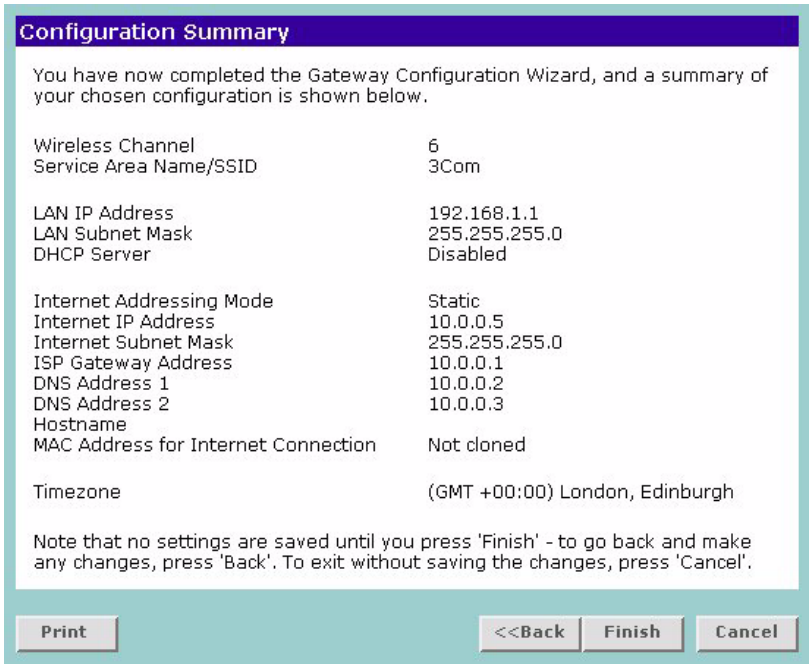
channel you select as this may be useful if you experience problems with your clients.

Summary

Figure 26 Configuration Summary Screen


Configuration Summary
You have now completed the Gateway Configuration Wizard, and a summary of your chosen configuration is shown below.
Wireless Channel 6
Service Area Name/SSID 3Com
LAN IP Address 192.168.1.1
LAN Subnet Mask 255.255.255.0
DHCP Server Disabled
Internet Addressing Mode Static
Internet IP Address 10.0.0.5
Internet Subnet Mask 255.255.255.0
ISP Gateway Address 10.0.0.1
DNS Address 1 10.0.0.2
DNS Address 2 10.0.0.3
Hostname
MAC Address for Internet Connection Not cloned
Timezone (GMT +00:00) London, Edinburgh
Note that no settings are saved until you press 'Finish' - to go back and make any changes, press 'Back'. To exit without saving the changes, press 'Cancel'.
Print
<<Back
Finish
Cancel

When you complete the Setup Wizard, a configuration summary will display. Verify the configuration information of the Gateway and then click *Finish* to save your settings. 3Com recommends that you print this page for your records.

If you have made changes to the LAN Settings or wireless configuration options, you may need to reconfigure the computer you are using in order to make contact with the Gateway again.

Your Gateway is now configured and ready for use.

For information on improving your Wireless network security see "Wireless Settings" *on* page 47.

See Chapter 5 for a detailed description of the Gateway configuration screens.

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5 GATEWAY CONFIGURATION

Navigating Through the Gateway Configuration Pages

This chapter describes all the screens available through the Gateway configuration pages, and is provided as a reference. To get to the configuration pages, browse to the Gateway by entering the URL in the location bar of your browser. The default URL is **`http://192.168.1.1`** but if you changed the Gateway LAN IP address during initial configuration, use the new IP address instead. When you have browsed to the Gateway, log in using your system password (default **`admin`**).

Main Menu

At the left side of all screens is a main menu, as shown in Figure 27 on page 42. When you click on a topic from the main menu, that page will appear in the main part of the screen.

- Welcome — displays the firmware version of the Gateway, allows you to change your password, and launch the Wizard
- LAN Settings — allows you to configure IP address and subnet mask information, set up DHCP server parameters, and display the DHCP client list.
- Wireless Settings — enables /disables access from wireless computers, and provides facilities for improving the security of the wireless network.
- Internet Settings — sets up Internet addressing modes such as PPPoE and PPTP connections, allows you to clone the Gateway's MAC address, and set up dynamic IP address allocation and static IP address settings.
- Firewall — allows configuration of the Gateway's firewall features: Virtual Servers, Special Applications, PCs Privileges, URL Filtering and Security options
- System Tools — allows the administrator to perform maintenance activities on the Gateway.

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- Status and Logs — displays the current status and activity logs of the Gateway.
- Support/Feedback — contains a comprehensive online help system and allows you to provide 3Com with feedback on your Gateway.

Option Tabs

Each corresponding menu page may also provide sub-sections which are accessed through the use of tabs (see Figure 27 for example). To access a sub-section, simply click on the required tab.

Getting Help

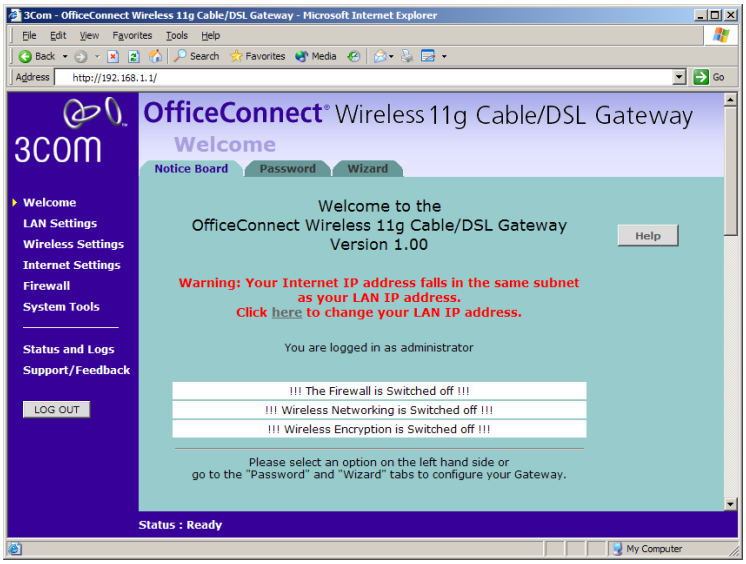
On every screen, a Help button is available which provides access to the context-sensitive online help system. Click *Help* for further assistance and guidance relating to the current screen.

Welcome Screen

The *Welcome* section allows you to view the Notice board and to change your Password. You can also gain access to the Configuration Wizard. (See "Accessing the Wizard" on page 29 for details).

Notice Board

Figure 27 Notice Board Screen


3Com - OfficeConnect Wireless 11g Cable/DSL Gateway - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://192.168.1.1/
3com
OfficeConnect Wireless 11g Cable/DSL Gateway
Welcome
Notice Board
Password
Wizard
Welcome
LAN Settings
Wireless Settings
Internet Settings
Firewall
System Tools
Status and Logs
Support/Feedback
LOG OUT
Welcome to the
OfficeConnect Wireless 11g Cable/DSL Gateway
Version 1.00
Help
Warning: Your Internet IP address falls in the same subnet as your LAN IP address.
Click here to change your LAN IP address.
You are logged in as administrator
!!! The Firewall is Switched off !!!
!!! Wireless Networking is Switched off !!!
!!! Wireless Encryption is Switched off !!!
Please select an option on the left hand side or go to the "Password" and "Wizard" tabs to configure your Gateway.
Status : Ready
My Computer

The Notice Board is used to display configuration warning messages. For example, you would be warned if you had disabled wireless networking or wireless encryption.

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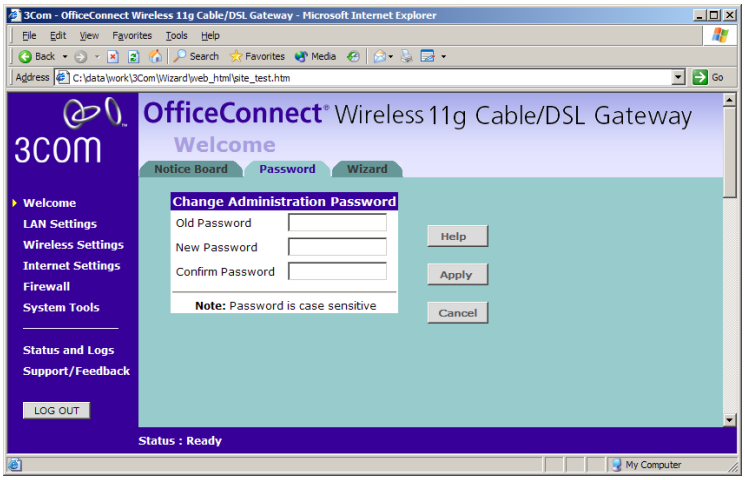
Password

Figure 28 Password Screen



Changing the Administration Password

You can change the password to prevent unauthorized access to the Administration System. To do this:

1. Enter the current password in the *Old Password* field
2. Enter the new password in the *New Password* field
3. Enter the new password again in the *Confirm Password* field
4. Click *Apply* to save the new password

The password is case sensitive.

If you have forgotten your password you need to reset the Gateway. See "Forgotten Password and Reset to Factory Defaults" *on* page 85

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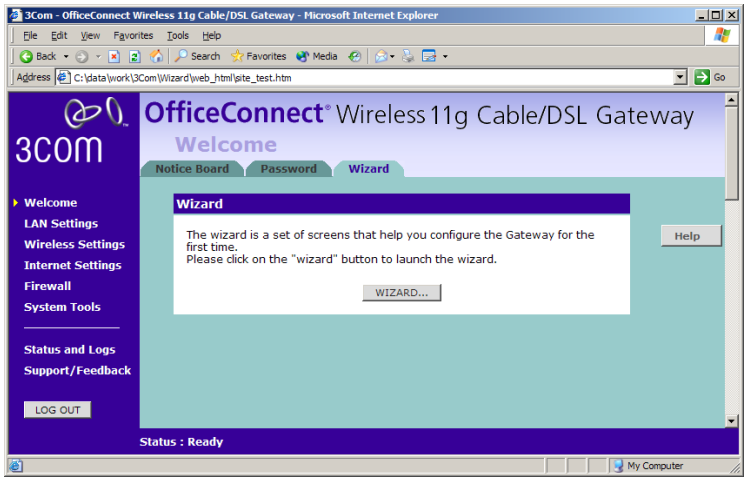
Wizard

Figure 29 Wizard Screen



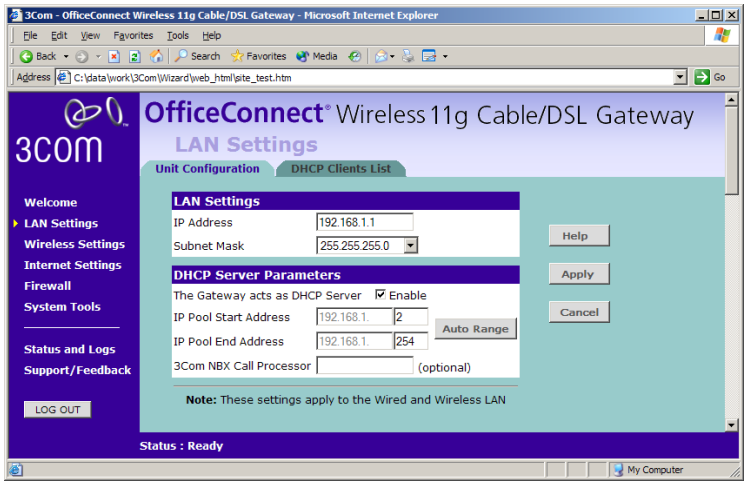
Click *WIZARD...* to launch the configuration wizard. Refer to Chapter 4 for information on how to run the wizard.

LAN Settings

The LAN Settings menu provides the following options:

Unit Configuration

Figure 30 Unit Configuration Screen



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The LAN Settings screen is used to specify the LAN IP address of your Gateway, and to configure the DHCP server.

1 Select *Unit Configuration* and then specify the Gateway *IP Address* and *Subnet Mask* in the LAN Settings field. The default IP address of the Gateway is 192.168.1.1.

2 If you want to use the Gateway as a DHCP Server, click in the *Enable* check box.

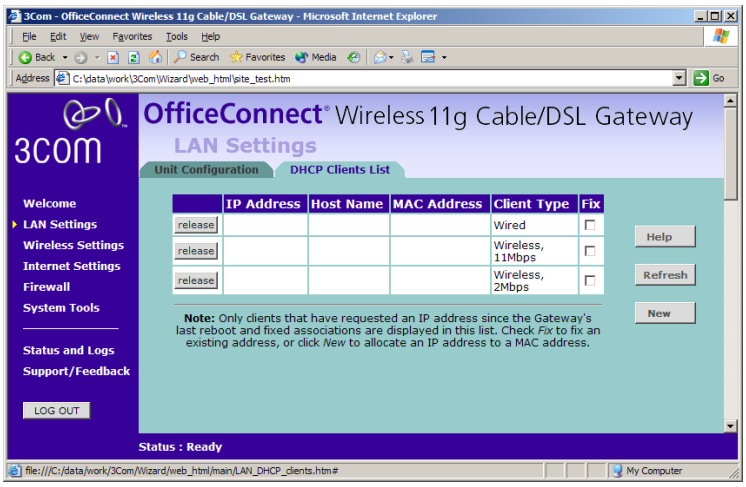
3 Clicking *Auto Range* will automatically choose the largest available range of addresses for your network.

4 Check all of your settings, and then click *Apply*.

The DHCP server will give out addresses to both wired and wireless clients.

DHCP Clients List

Figure 31 DHCP Clients List Screen



The DHCP Clients List provides details on the devices that have received IP addresses from the Gateway. The list is only created when the Gateway is set up as a DHCP server. For each device that is connected to the LAN the following information is displayed:

- IP address — The Internet Protocol (IP) address issued to the client machine.
- Host Name — The client machine's host name, if configured.
- MAC Address — The Media Access Control (MAC) address of the

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- client's network card.
- Client Type — Whether the client is connected to the Gateway by wired or wireless connection.
- Fix — This box is checked if the IP address is fixed to the MAC address of the client's network card. Clients that have fixed addresses will get the same IP address each time they connect.

  Check the box to fix an association. Uncheck the box to remove the fixed association.

As you connect more devices, the client list will grow to a maximum number of 253 clients.

The *release* button allows the lease time for the IP address that has been issued to a device to be cleared. The lease time is set at 12 hours. If a PC has been switched off, using the Release button would allow the 12 hour lease time to be cleared. The IP address would then be available for another device if there were no other IP addresses available.

Adding Fixed DHCP Mappings

You can add Fixed Mappings so that the Gateway allocates an IP address chosen by you when it encounters a particular device.

You only need to create Fixed Mappings for devices that need a specific IP address. For devices that do not need a specific IP address, the Gateway will automatically allocate addresses.

To add a Fixed Mapping:

1. Click New. The DHCP Fixed Mapping Setup screen will be displayed.
2. Enter the MAC Address for which you want to create a Fixed Mapping in the MAC Address of Client box.

The MAC Address must be entered as 6 hexadecimal pairs, e.g. 12-34-56-78-90-ab.

3. Enter the IP Address that you want to reserve in the IP Address for client box.
4. Click Add to add the Fixed Mapping or Close to close the window without adding the Fixed Mapping.

   The Fixed DHCP Mapping will be displayed in the DHCP Clients list as a Fixed Association.

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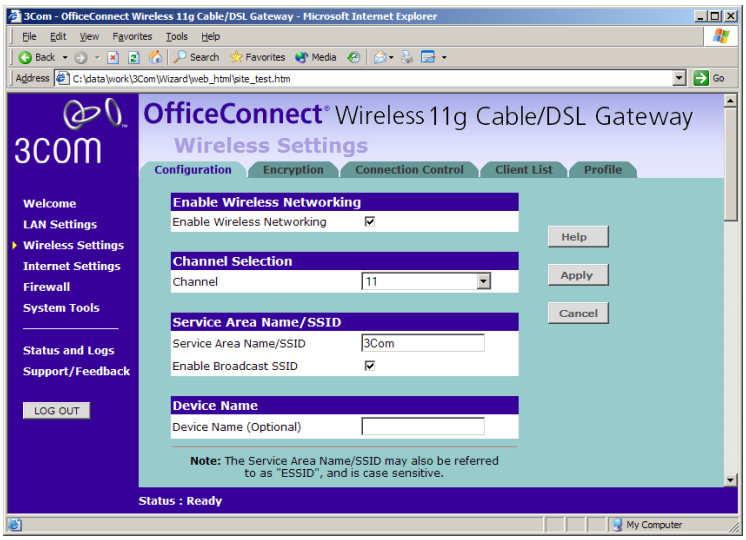
Wireless Settings

To improve the security of your wireless network, 3Com recommends that you:

1. *Change the SSID from its default value - see* page 48
2. *Enable Encryption - see* page 49
3. *Enable Connection Control - see* page 53

Configuration

Figure 32 Configuration Screen



Enable Wireless Networking

Allows you to enable/disable the wireless section of your LAN. When disabled, no wireless PCs can gain access to either the Internet or other PCs on your Wired or Wireless LAN through this Gateway.

Channel Selection

The Channel Selector allows you to specify which Channel the Gateway will transmit and receive on. If another access point or gateway nearby is using the same Channel as you, there will be a reduction in the performance of your network. If this seems to be the case, you should select a different channel number. Usually the Wireless computers will scan to find the correct channel, but if they don't you must configure them to use the same Channel number as the Gateway.

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Choose the *Clear Channel Select* option to automatically choose the clearest channel. The Gateway will check for the clearest channel whenever it is rebooted, powered up, and when the *Clear Channel Select* option is first applied.

Valid channels are country dependent. See "Channels" *on* page 121 *for a list of channels approved by each country.*

Service Area Name/SSID

This allows you to name your Wireless network. The field will accept any alphanumeric string and has a maximum length of 32 characters. Your Wireless computers must be configured with exactly the same name or you will not establish a connection. The Service Area Name may also be referred to as "ESSID" depending on your networking vendor. By default the Gateway uses the name "3Com". 3Com recommends that you change the default name.

In order that your wireless computers can connect to the Gateway, you must:

- *Use Infrastructure Mode not Adhoc Mode.*
- *Have the same Service Area Name as the Gateway.*
- *Have the same Channel number as the Gateway.*
- *Use the same encryption type and keys as the Gateway.*
- *Ensure that the PC is included in the authorized Wireless PCs list if Connection Control is enabled. See* page 53.

Enable Broadcast SSID

This feature can be used to improve the security of your wireless network. When the tickbox is checked, the Gateway will broadcast the Service Area Name/SSID of your wireless network. This will allow unauthorized clients from detecting your SSID and attempting to connect to your network.

If you have a wireless client that can detect all the available SSIDs in your area, your client will not list the Gateway SSID unless this feature is enabled. The clients will still be able to connect, provided that they are supplied with the SSID.

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3Com recommends that you install your wireless network with this feature enabled and then disable it once you have set up the Gateway and wireless clients.

Encryption

When setting up wireless networks, it is important to remember that with encryption disabled, anyone with a Wireless PC can eavesdrop on your network. 3Com recommends that you get the network working with encryption disabled first and then enable it as the last step. This will simplify setting up your network.

The Gateway supports two types of encryption:

- WPA — Wi-Fi Protected Access (WPA) is a 256 bit encryption method with keys that change over time.
- WEP — Wireless Equivalent Privacy (WEP) is a 64 bit or 128 bit encryption method with user configurable fixed keys.

WPA provides a higher level of security, provided by its longer key and dynamic changes made to the key over time. 3Com recommends that you use WPA with any clients which support it.

If you enable encryption on the Gateway, you must reconfigure your wireless PCs to use exactly the same Encryption Type and Keys otherwise the devices will not understand each other.

The encryption methods used by the Gateway secure data transmitted through wireless communications between the Gateway and its wireless clients. Enabling encryption has no security effect on data transmitted through wired (Ethernet) connections or through your connections to the Internet.

Configuring WPA Encryption

The only configuration that is needed for WPA is to enter the pre-shared key. This key is used to start the dialog between the Gateway and the client. During this dialog, a new key is agreed, making it more difficult to eavesdrop on wireless networks encrypted using WPA, than those encrypted using WEP. The pre-shared key can be entered as a 256 bit series of hexadecimal digits or as a pass-phrase.

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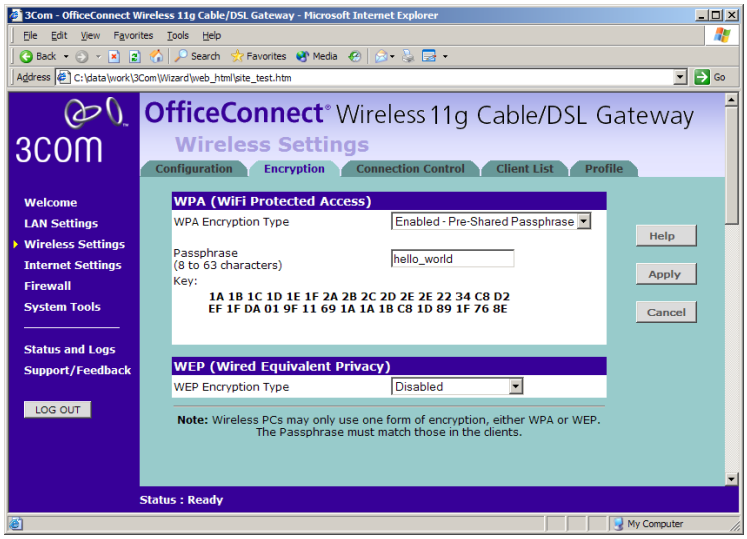
Figure 33 Encryption Keys Screen showing WPA configuration



To enter the pre-shared key as hexadecimal digits:

1 Select *Enabled - Manual Pre-shared Key* from the *WPA Encryption Type* drop-down box.

2 Enter a pair of hexadecimal digits in each of the 32 *Key* fields. Each field can contain a hexadecimal number from 00 to ff, for example 1a.

3 Click *Apply* to generate the key.

To enter the pre-shared key as a pass-phrase:

1 Select *Enabled - Pre-Shared Passphrase* from the *WPA Encryption Type* drop-down box.

2 Enter a phrase of between 8 and 63 characters in length in the *Passphrase* field. This passphrase will be used to generate a 256 bit key.

3 Click *Apply* to generate the key.

Configuring WEP Encryption

There are two levels of WEP encryption available, 64 bit (sometimes referred to as 40 bit) and 128 bit. Use the *WEP Encryption Type* box to select the desired level.

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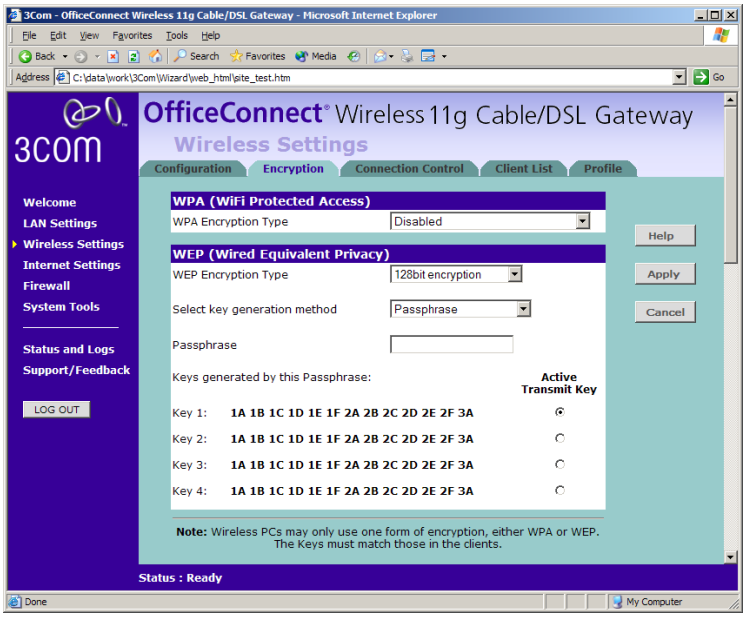
Encryption Keys

Figure 34 Encryption Keys Screen showing WEP configuration


3Com - OfficeConnect Wireless 11g Cable/DSL Gateway - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address C:\data\work\3Com\Wizard\web_html\site_test.htm
3Com
OfficeConnect Wireless 11g Cable/DSL Gateway
Wireless Settings
Configuration
Encryption
Connection Control
Client List
Profile
Welcome
LAN Settings
Wireless Settings
Internet Settings
Firewall
System Tools
Status and Logs
Support/Feedback
LOG OUT
WPA (WiFi Protected Access)
WPA Encryption Type
Disabled
WEP (Wired Equivalent Privacy)
WEP Encryption Type
128bit encryption
Select key generation method
Passphrase
Passphrase
Keys generated by this Passphrase:
Active Transmit Key
Key 1: 1A 1B 1C 1D 1E 1F 2A 2B 2C 2D 2E 2F 3A
Key 2: 1A 1B 1C 1D 1E 1F 2A 2B 2C 2D 2E 2F 3A
Key 3: 1A 1B 1C 1D 1E 1F 2A 2B 2C 2D 2E 2F 3A
Key 4: 1A 1B 1C 1D 1E 1F 2A 2B 2C 2D 2E 2F 3A
Note: Wireless PCs may only use one form of encryption, either WPA or WEP. The Keys must match those in the clients.
Help
Apply
Cancel
Status : Ready
Done
My Computer

A Key is a hexadecimal (0-9, A-F) number used to encrypt and decrypt the data. There can be up to 4 keys and each key can be as long as 26 digits. The Gateway also offers a number of methods for converting plain text into hex keys. The text is much easier to remember than hex keys but it relies on your wireless adapters also supporting this feature. Different manufacturers have developed different ways of converting plain text and so interoperability is not guaranteed. If you are experiencing difficulty, the Manual Hex Key method is supported by most vendors.

There are four methods available to generate the encryption keys:

- Manual Key Entry - This method allows you to manually enter hex keys. Virtually all manufacturers support this scheme. Enter a two digit hexadecimal number in every box. Hexadecimal numbers are formed from 0-9 and A-F.
- 3Com Encryption String - This method is supported by 3Com Wireless products. The string can contain any alphanumeric characters and must be between 6 and 30 characters long. A single string will automatically generate 4 unique keys for 64 or 128 bit WEP.
- ASCII - This method is supported by some adapter cards running under Windows XP. The string must be exactly 5 characters for 64 bit

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WEP and 13 characters for 128 bit WEP. You must enter a separate string for each of the 4 Keys. You can leave a string blank provided this Key is not selected as the Active Transmit Key.

- Passphrase - This is another common method and similar to the 3Com Encryption string. In 64 bit WEP, the passphrase will generate 4 different keys. However, in 128 bit WEP, this method only generates 1 key which is replicated for all 4 keys. The passphrase can be up to 31 characters long and may contain any alphanumeric characters.

Select the key generation method you wish to use from the drop down list. If you have other wireless products choose the scheme that is compatible with these, then enter the appropriate information.

If you encounter any difficulty when you enable WEP ensure that you check that each key on your wireless computer is exactly the same as each key on your Gateway. In other words, Key number 1 on the Wireless computer must have the same Hex number as Key number 1 on the Gateway, Key 2 on the Wireless computer must match Key 2 on the Gateway and so on.

The *Active Transmit Key* selects which of the 4 Keys the Gateway uses when it transmits. You can change the selected key periodically to increase the security of your network.

Some wireless adapters have only one key available on their WEP configuration page. If this is the case ensure it is the same as Key 1 on the Gateway and that it is selected as the active transmit key.

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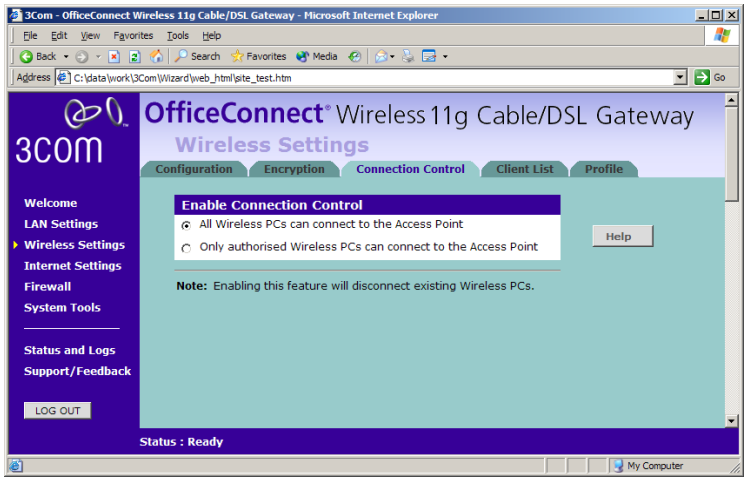
Connection Control

Figure 35 Connection Control Screen



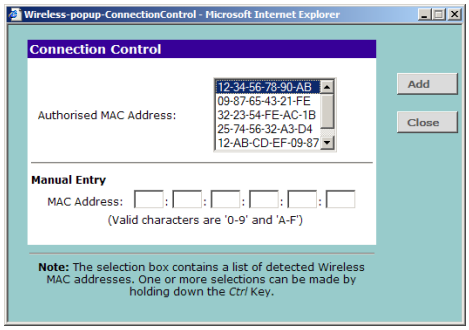
A higher level of security can be achieved for your wireless network if you use both encryption and you specify only certain wireless computers can connect to the Gateway. By default, any wireless computer that has the same Service Area Name/SSID, channel and encryption settings as the Gateway can connect to it.

Select *Only Authorized Wireless PCs can connect to the Gateway* to enable and configure this feature.

If you enable this feature from a Wireless PC, it will automatically be added to the Authorized Wireless PC list.

Authorized Wireless PCs

Figure 36 Connection Control Detail Screen



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To create a list of Wireless computers that can access the Gateway:

1 Press *New*. The screen shown in Figure 36 opens.

2 Select the MAC addresses of the Wireless PCs for which you want to allow access.

To select multiple MAC addresses, hold down the Ctrl *key while clicking on the addresses.*

The drop down list on the Connection Control *window will contain the MAC addresses of all Wireless PCs that are in range, currently operating, and have the same Service Area Name/SSID, channel and encryption settings as the Gateway. You will find this screen easier to use if you set up and make a note of all of your wireless PC's on your network first. You may also add the entries manually if you know the MAC address.*

To add a MAC address that is not in the list, enter the MAC address in the appropriate fields. A MAC address consists of 12 characters. Valid characters are '0-9', and 'A-F'.

3 Press *Add*.

Click Close *to discard all changes.*

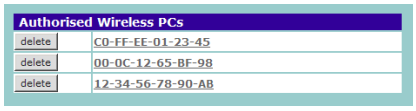
Modifying a MAC Address

1 Click on the MAC address to be modified in the table (Figure 37).

2 Modify the MAC address.

3 Press *Apply* to accept the changes.

Figure 37 MAC Address Table



Click Close *to discard all changes.*

Deleting a MAC Address

The connection rights for a Wireless PC listed in the table can be removed by pressing *Delete* for that entry in the table.

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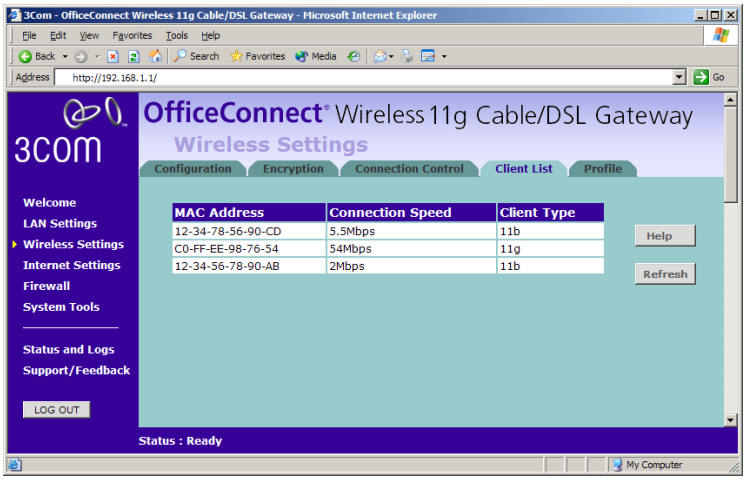
Once an entry has been deleted it cannot be undone. Please wait 30 seconds for changes to take effect.

Client List

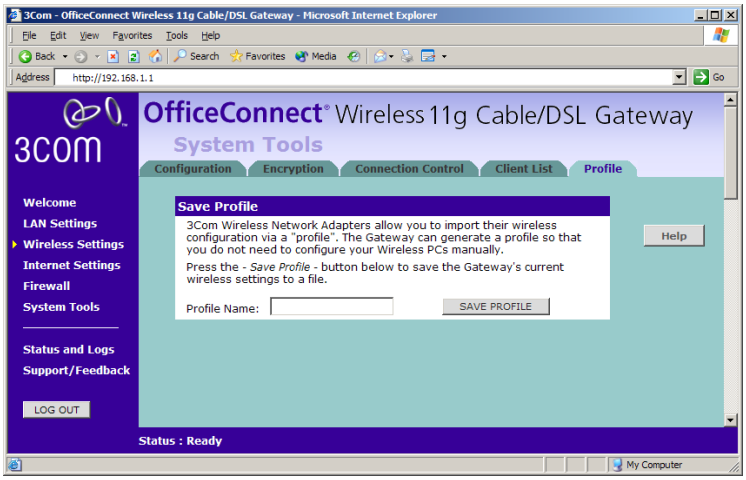
Figure 38 Client List Screen



The Wireless Client List provides details on the devices that are connected to the Wireless LAN. The list is only created when Wireless Networking is enabled. For each device that is connected to the Wireless LAN, the MAC address and Connection Speed of that device is displayed. As you connect more devices to the Wireless LAN, the client list will grow to a maximum of 32 (the maximum number of wireless devices that the Gateway can support).

Profile

Figure 39 Profile Screen


3Com - OfficeConnect Wireless 11g Cable/DSL Gateway - Microsoft Internet Explorer
http://192.168.1.1
OfficeConnect® Wireless 11g Cable/DSL Gateway
System Tools
Configuration
Encryption
Connection Control
Client List
Profile
Welcome
LAN Settings
Wireless Settings
Internet Settings
Firewall
System Tools
Status and Logs
Support/Feedback
LOG OUT
Save Profile
3Com Wireless Network Adapters allow you to import their wireless configuration via a "profile". The Gateway can generate a profile so that you do not need to configure your Wireless PCs manually.
Press the - Save Profile - button below to save the Gateway's current wireless settings to a file.
Profile Name:
SAVE PROFILE
Help
Status : Ready

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Some 3Com Wireless Network Adapters allow you to import Wireless configurations via a 'profile'. The Gateway can generate a profile so that you do not need to configure your Wireless PCs manually.

The profile contains three items as follows:

- **Service Area Name/SSID of the Gateway**

  This is configured on the *Configuration* tab under the *Wireless Settings* option.

- **Encryption settings from the Gateway**

  This is configured on the *Encryption* tab under the *Wireless Settings* option.

- **Profile Name**

  This is used to identify the profile once it has been imported into the Wireless Network Adapter configuration software.

To set up a profile (once the Service Area Name/SSID and Encryption settings have been configured in the Gateway):

1. Enter a Profile Name (up to 25 alphanumeric characters) and then click *Save Profile*.
2. Your browser will then prompt you to enter a file name and folder location in which to save the profile. Once the profile has been saved it can be copied on to another PC and imported into the 3Com Wireless Network Adapter.

For instructions on how to import a profile, refer to the User Guide that accompanies your 3Com Wireless Network Adapter(s).

If, once the profile is imported, the Wireless Network Adapter cannot connect to the Gateway, check that:

- the adapter is within range of the Gateway

if *Connection Control* has been enabled in the Gateway, the MAC address of the Wireless Network Adapter must be included in the list of authorized Wireless PCs.

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Internet Settings

Before you can configure the Gateway, you need to know the IP information allocation method used by your ISP. There are four different ways that ISPs can allocate IP information, as described below:

1 Static IP Address (DSL or Cable)

The ISP provides the IP addressing information for you to enter manually. To configure the Gateway you will need to know the following:

- IP Address
- Subnet Mask
- ISP Gateway
- DNS address(es)

2 Dynamic IP Address (DSL or Cable)

Dynamic IP addressing (or DHCP) automatically assigns the Gateway IP information. This method is popular with Cable providers. This method is also used if your modem has a built in DHCP server.

3 PPPoE (DSL only)

If the installation instructions that accompany your modem ask you to install a PPPoE client on your PC, then select this option. To configure the Gateway you will need to know the following:

- Username
- Password
- Service Name (if required by your ISP)

When you install the Gateway, you will not need to use the PPPoE software on your PC.

4 PPTP (DSL or Cable)

PPTP is only used by some European providers. If the installation instructions that accompany your modem ask you to setup a dialup connection using a PPTP VPN tunnel then select this option. To configure the Gateway you will need to know the following:

- Username
- Password
- VPN Server address (usually your modem)

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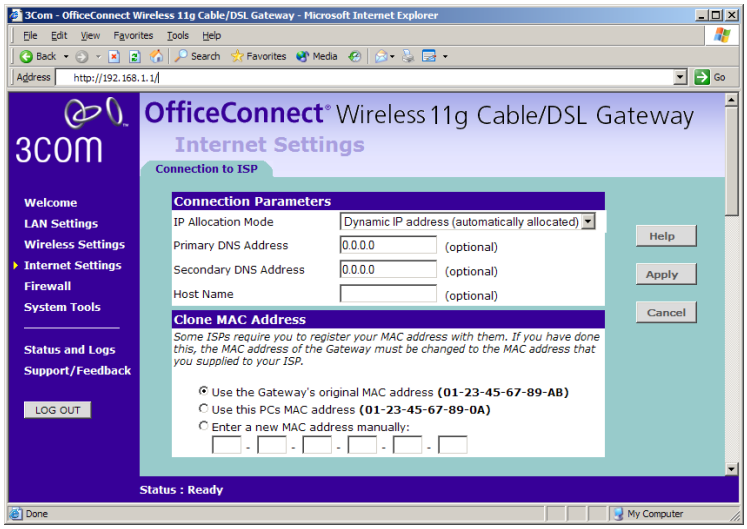
When you install the Gateway, you will not need to use the dialup VPN on your PC anymore.

Connection to ISP

Figure 40 Connection to ISP Screen



Before beginning this section, ensure you have the required information from your ISP. (See "Before you Install your Gateway" on page 21.)

Select *Internet Settings* from the main menu to display *Connection to ISP* (Figure 40). Choose an *IP Allocation Mode* from the drop down box.

Select an IP Allocation Mode from the following:

- Static IP address (to be specified manually) see page 59
- Dynamic IP address (automatically allocated) see page 60
- PPPoE (used by DSL providers only) see page 61
- PPTP (used by some European providers) see page 62

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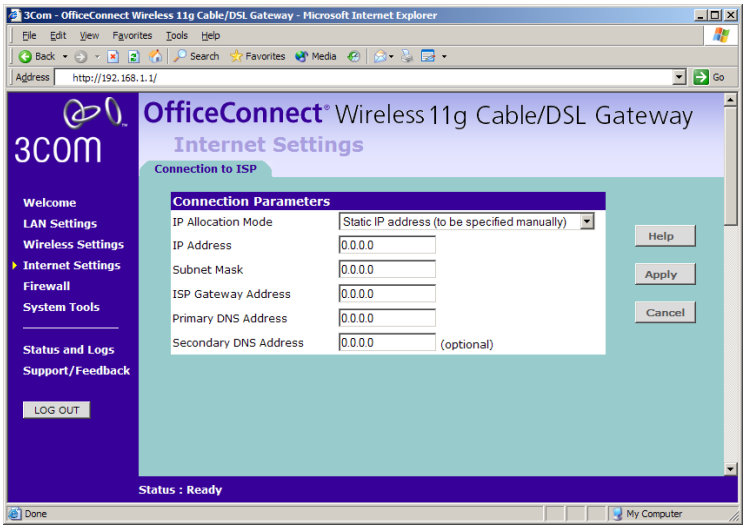
Static IP Address

Figure 41 Connection Parameters Screen - Static IP



To setup the Gateway for use with a Static IP address connection:

1 Select *Static IP Address (to be specified manually)* in the *IP Allocation Mode* field (Figure 41).

2 Enter your IP Address in the *IP Address* text box.

This information, along with the rest of the information in this screen, should be provided to you by your ISP. If the information is already entered, your ISP has pre-configured your Gateway, and you should go to step 7.

3 Enter your subnet mask in the *Subnet Mask* text box.

4 Enter your ISP Gateway address in the *ISP Gateway Address* text box.

5 Enter your primary DNS address in the *Primary DNS Address* text box.

6 Enter your secondary DNS address in the *Secondary DNS Address* text box.

This step is optional. Not all ISPs require a secondary DNS address.

7 Check all of your settings, and then click *Apply*.

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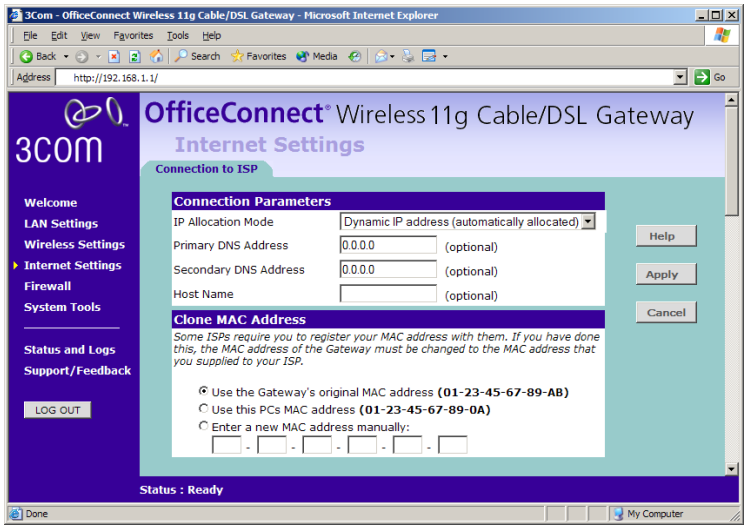
Dynamic IP Address

Figure 42 Connection Parameters Screen - Dynamic IP



If this mode is selected, your IP Address, Subnet Mask, and DNS Address will be obtained automatically from your ISP. They are not displayed on this screen, but may be viewed on the Status screen (click on *Status and Logs* on the left hand menu bar).

To setup the Gateway for use with a dynamic IP address connection:

1. Select *Dynamic IP Address (automatically allocated)* in the *IP Allocation Mode* field. (Figure 42)
2. Enter your *Primary DNS Address* and *Secondary DNS address*.

   Your ISP may provide you with primary and secondary DNS addresses. If they have been provided, enter the addresses in the appropriate text boxes. If not, leave *0.0.0.0* in the boxes.
3. Enter the *Host Name* (optional).

   Some ISPs require a host name. If your ISP has this requirement, enter the host name in the *Host Name* text box.
4. If you use 'Cable', your ISP may use your MAC address to authenticate you. If this is the case, you will need to 'Clone' your MAC address. There are three options:

   - *Use the Gateway's original Internet MAC address* - This field is selected by default and is automatically filled in with the MAC address of the Gateway.

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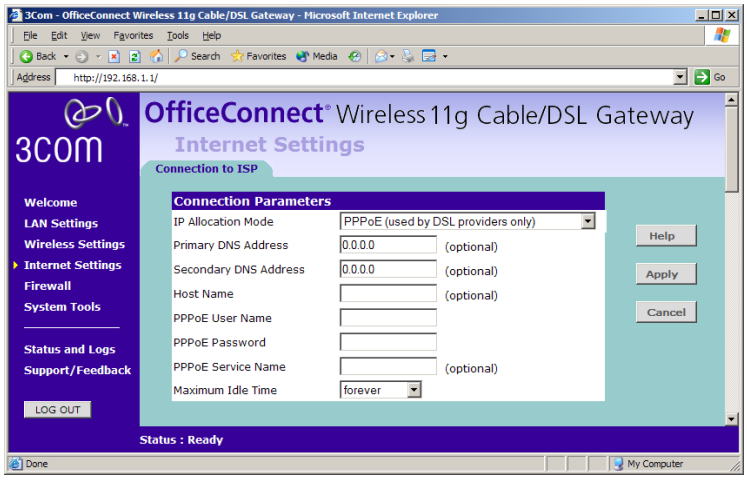
- *Use this PC's MAC address* - This field is automatically filled in with the MAC address of the PC you are using to configure the Gateway. You should use this address only if you were previously using this computer to connect directly to your modem.
- *Enter a new MAC address manually* - Use this option if you want to specify a new MAC address. Enter the new MAC address.

5 Check all settings and click *Apply*.

PPP over Ethernet

Figure 43 PPPoE Setup Screen



To setup the Gateway for use with a PPP over Ethernet connection, use the following procedure:

1 Select *PPP over Ethernet* in the *IP Allocation Mode* field. (Figure 43)

2 Enter your *Primary DNS Address* and *Secondary DNS address*.

Your ISP may provide you with primary and secondary DNS addresses. If they have been provided, enter the addresses in the appropriate text boxes. If not, leave *0.0.0.0* in the boxes.

3 Enter the *Host Name* (optional).

Some ISPs require a host name. If your ISP has this requirement, enter the host name in the *Host Name* text box.

4 Enter your PPP over Ethernet user name in the *PPPoE User Name* text box.

5 Enter a password in the *PPPoE Password* text box.

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6 Enter your PPP over Ethernet service name in the *PPPoE Service Name* text box. Not all ISPs require a PPPoE service name. Only enter a service name if your ISP requires this.

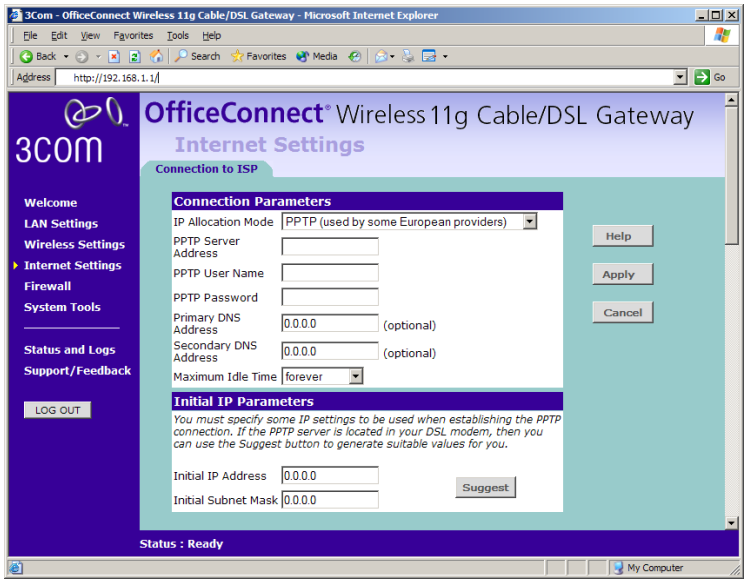
7 Select an idle time from the *Maximum Idle Time* drop-down list.

This value will correspond to the amount of idle time (no Internet activity) that will pass before the Gateway automatically ends your PPP over Ethernet session.

Since the Gateway contains its own PPPoE client, you no longer need to run PPPoE client software on your computer to access the Internet.

PPTP

Figure 44 PPTP Setup Screen



To setup the Gateway for use with a PPTP connection, use the following procedure:

1 Select *PPTP (used by some European providers)* in the *IP Allocation Mode* field. (Figure 44)

2 Enter your PPTP server address in the *PPTP Server Address* text box (this is typically the address of your modem).

3 Enter your PPTP user name in the *PPTP User Name* text box.

4 Enter your password in the *PPTP Password* text box.

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5 Enter your *Primary DNS Address* and *Secondary DNS address*.

Your ISP may provide you with primary and secondary DNS addresses. If they have been provided, enter the addresses in the appropriate text boxes. If not, leave *0.0.0.0* in the boxes.

6 Select an idle time from the *Maximum Idle Time* drop-down list.

This value will correspond to the amount of idle time (no Internet activity) that will pass before the Gateway automatically ends your PPTP session.

7 IP settings must be used when establishing a PPTP connection. Fill in the *Initial IP Address* and the *Initial Subnet Mask* fields if your ISP has provided you with these settings. Alternatively, if the PPTP server is located in your DSL modem, click *Suggest* to select an IP address on the same subnet as the PPTP server.

Firewall

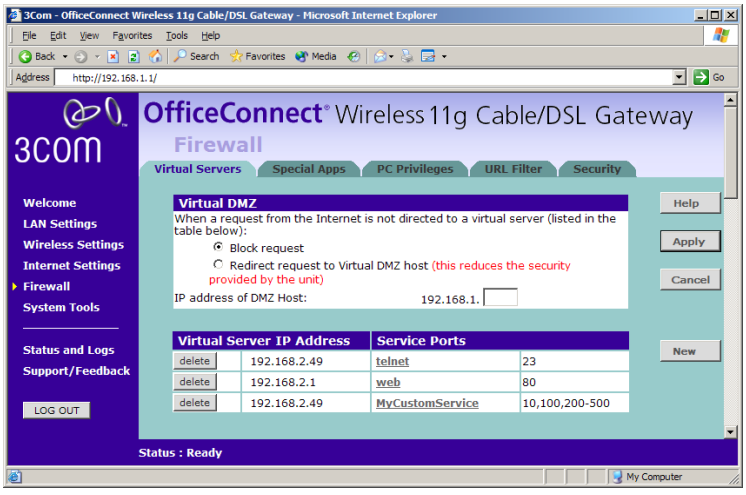
On the main frame of the *Firewall* setup screen is a menu with five tabs: Virtual Servers, Special Applications, PCs Privileges, URL Filter, and Security.

Virtual Servers

Selecting the *Firewall* option on the main menu displays the Virtual Servers setup screen. (Figure 45)

Virtual DMZ

Figure 45 Virtual Servers Screen



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DMZ (De-Militarized Zone) Host is a computer without the protection of the firewall. This feature allows a single computer to be exposed to unrestricted 2-way communication from outside of your network. This feature should be used only if the Virtual Server or Special Applications options do not provide the level of access needed for certain applications.

To configure one of your computers as a DMZ host, enter the last digit(s) of the IP address of the computer in the *IP Address of DMZ Host* text box, and then click *Apply*.

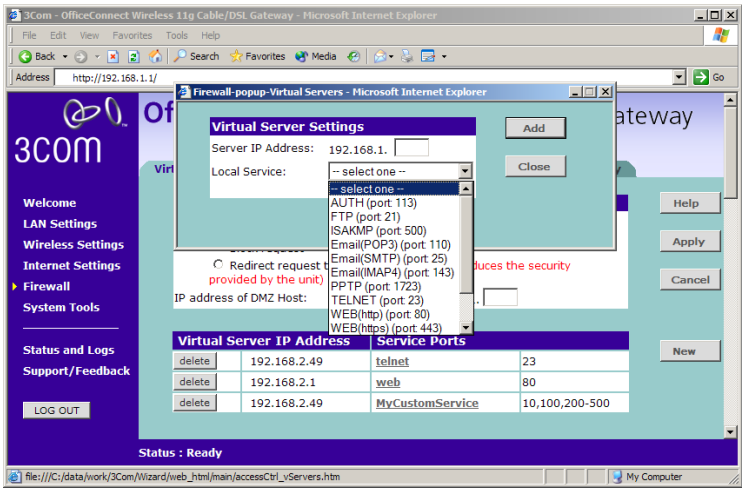
Virtual Server

Activating and configuring a virtual server allows one or more of the computers on your network to function as a public server. For example, one of your computers could be configured as an FTP server, allowing others outside of your office network to download files of your choosing. Or, if you have created a Web site, you can configure one of your computers as a Web server, so that others can view your Web site.

To configure a virtual server:

1. Click *New* on the right side of the screen to open the *Virtual Server Settings* dialogue box. (Figure 46)
2. Enter the last digit(s) of the IP address of the computer in the *Server IP Address* text box.
3. Select the Service from the pull-down list. (Figure 46)

Figure 46 Virtual Servers Settings Screen



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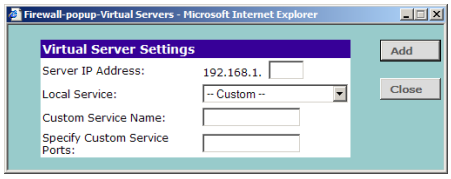
Or select *Custom* to specify a suitable name for the service and then enter the port numbers required for that service. (Figure 47)

Figure 47 Custom Setup Screen

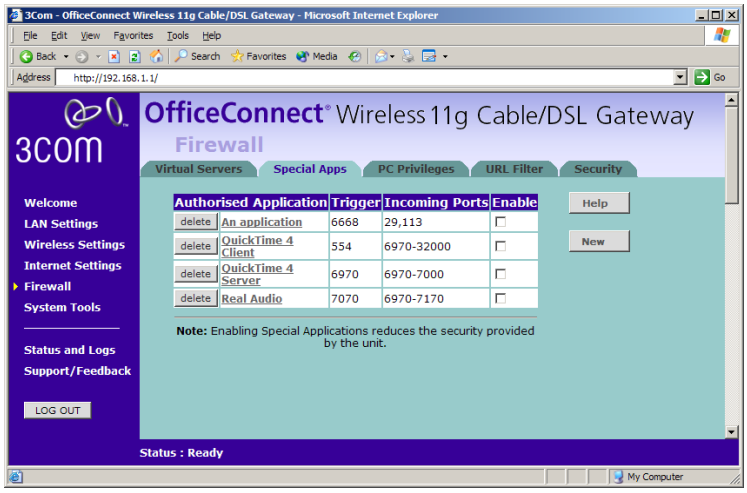


4 Click *Add* to save the settings.

The port numbers are specified using a comma-separated list, with hyphens to denote port number ranges. So for example, entering *2, 3, 5-7* would cause ports 2, 3, 5, 6, and 7 to be activated.

Special Applications

Figure 48 Special Applications Screen



Select *Special Applications* tab to display *Authorized Application* setup screen. (Figure 48)

Some software applications require special or multiple connections to the Internet and these would normally be blocked by the firewall. For example Internet Telephony or Video conferences require multiple connections.

So that these special applications can work properly and are not blocked, the firewall needs to be told about them. In each instance there will be a

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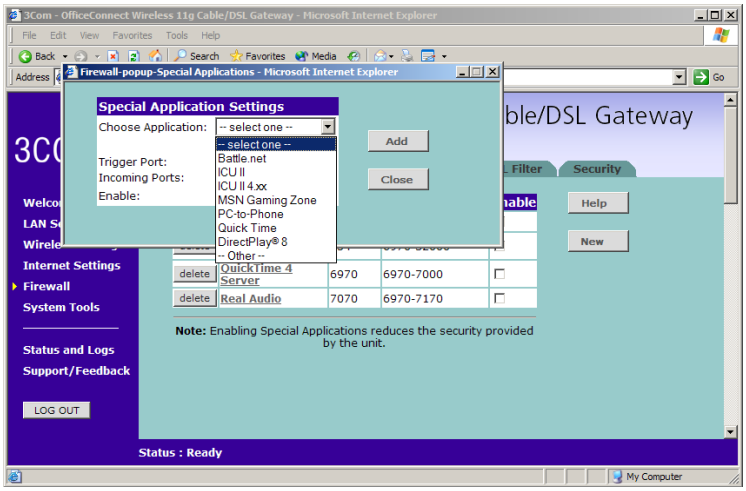
trigger port and incoming port(s), where traffic on the trigger port tells the firewall to open the incoming ports.

Each defined Special Application only supports a single computer user, and up to 10 Special Applications can be defined. Any incoming ports opened by a Special Application trigger will be closed after five minutes of inactivity.

To configure special applications:

1. Click *New*.
2. Select the applications from the pull-down list. (Figure 49)

Figure 49 Special Application Settings Screen



Or select *Other* to specify a suitable name for the special application and then enter a value in the *Trigger Port* and *Incoming Ports* text boxes (Figure 49). These values correspond to the outbound port numbers issued by the application.

The port numbers are specified using a comma-separated list, with hyphens to denote port number ranges. So for example, entering *2, 3, 5-7* would cause ports 2, 3, 5, 6, and 7 to be activated.

The Gateway will automatically allow FTP and NetMeeting sessions. You do not need to configure these as Special Applications.

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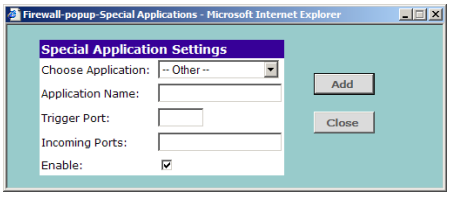
Figure 50 Other Applications Setup Screen

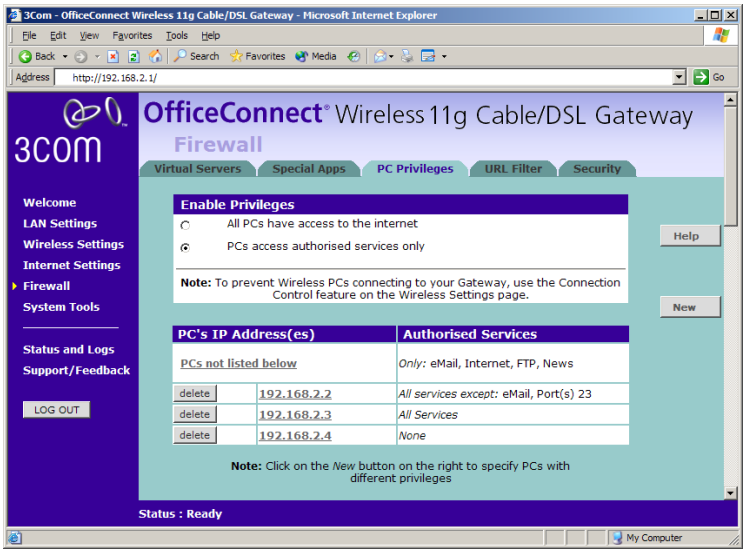


3 Click *Add* to save your settings.

Only one computer on your network can use the special application at any one time.

PC Privileges

Figure 51 PC Privileges Screen



Select *PC Privileges* to display the PC Privilege setup screen (Figure 51).

Access from the local network to the Internet can be controlled on a computer-by-computer basis. In the default configuration the Gateway will allow all connected computers unlimited access to the Internet.

PC Privileges allows you to assign different access rights for different computers on your network.

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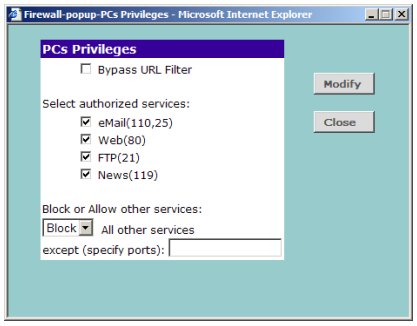
To use access control for all computers:

1. Click *PCs access authorized services only.*
2. Select *All PCs* to setup the access rights for all computers connected to the Gateway.
3. Select authorized services by clicking in the appropriate check box(es) (Figure 52).

Figure 52 All PCs Setup Screen



In addition to the four authorized services listed, you can choose to allow or block access to other services. You can either:

- Allow all other services with exceptions, or
- Block all other services with exceptions

4. To do this, select *Allow* or *Block* from the drop down menu and enter the exceptions into the text box.

   The port numbers are specified using a comma-separated list, with hyphens to denote port number ranges. So for example, entering *2, 3, 5-7* would cause ports 2, 3, 5, 6, and 7 to be activated.

For example, to block access to all services except Web (80) and a service that uses ports 2,3,5,6 and 7:

1. Tick the Web(80) *check box.*

2. Select 'Block' *all other services.*

3. Enter '2, 3, 5-7' *in the* 'except (specify ports) *box. See* Figure 53.

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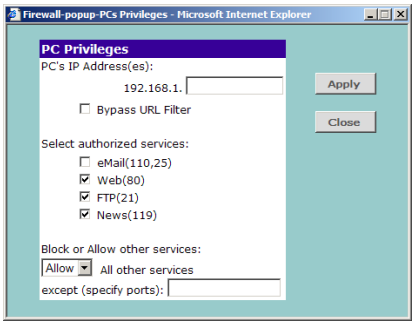
Figure 53 PC Privileges Setup Screen Example



5 Click *Modify* to save the settings or *Close* to discard them.

To assign different access rights for different computers:

1 If not already selected, click *PCs access authorized services only*.

2 Click *New* to display the *PC Privileges* setting screen.

3 Enter the last digit(s) of the IP address of the computer in the PC's IP Address text box.

4 Select authorized services by clicking in the appropriate check box(es).

In addition to the four authorized services listed, you can choose to allow or block access to other services. You can either:

- Allow all other services with exceptions, or
- Block all other services with exceptions

See step 4 of the previous section for more details.

5 Click *Add* to save the settings.

URL Filter

Select *URL Filter* to control your clients' access to Web sites. The Gateway's URL Filter has three settings:

- Disabled — Users can browse all Web sites. None will be filtered.
- Deny List — Users can browse all Web sites apart from those sites listed in the deny list and those whose URLs contain keywords listed in the deny list. See "Deny List" on page 70.
- Allow List — Users are unable to browse any Web sites except of those listed in the allow list and those whose URLs contain keywords listed in the allow list. See "Allow List" on page 71.

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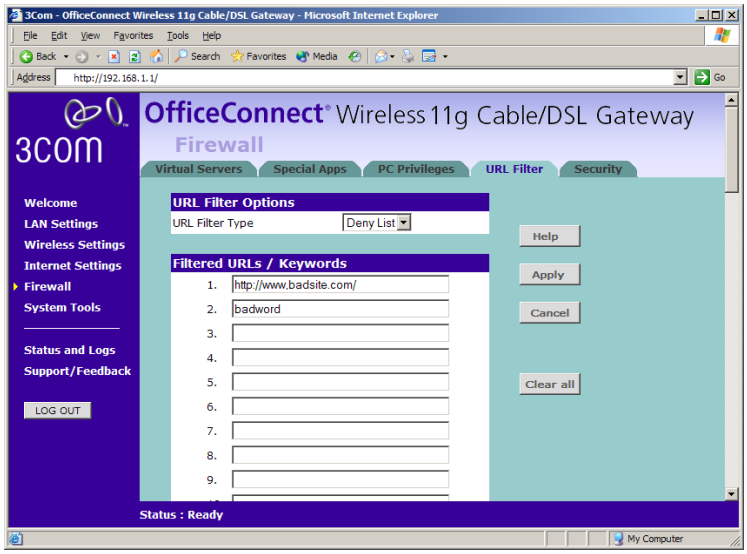
Deny List

To allow users access to all Web sites except for those you choose to block, choose *Deny List* in the URL Filter Type drop-down box (Figure 54).

Figure 54 URL Filter Screen showing Deny List



To filter a specific site, enter the URL for that site. For example, to stop your users from browsing a site called **`www.badsite.com`**, enter **`www.badsite.com`** or **`badsite.com`** in one of the fields.

If badsite.com has multiple sub-domains, such as this.badsite.com and that.badsite.com then you can either:

- Block them individually by entering **`this.badsite.com`** in one field and **`that.badsite.com`** in another.

  or

- Block them by entering the keyword **`badsite.com`** into one of the fields. This will block all URLs containing the string *badsite.com*. As well as blocking **`this.badsite.com`** and **`that.badsite.com`**, the keyword badsite.com would block searches that mentioned badsite.com in their domain name, for example **`www.notabadsite.com`**.

To filter a generic keyword enter it into one of the fields. You should exercise caution when choosing a keyword as many keywords are

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contained within other words. For example, filtering the word sex would filter the following example URLs:

- **`www.sussex.com`**
- **`www.thisexample.com`**

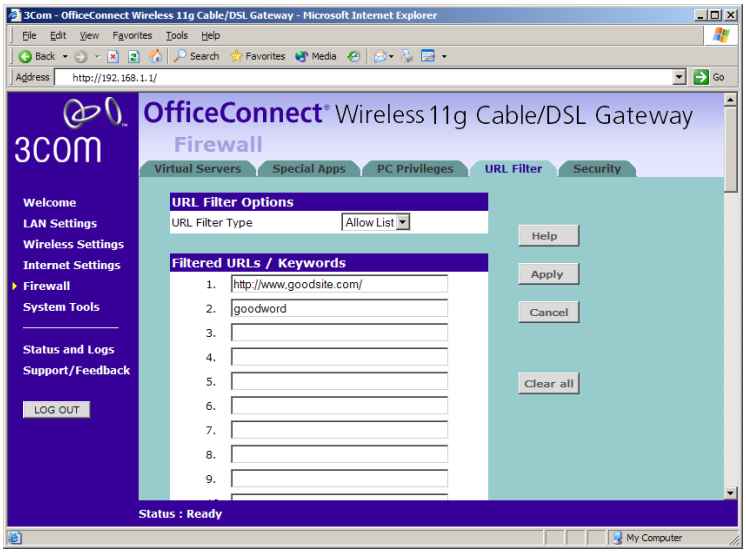
You can filter up to 30 keywords and URLs.

Computers that should not be subject to URL filtering can be excluded by ticking the Bypass URL Filter checkbox in the PC Privileges setup screen. See "PC Privileges" on page 67.

Allow List

To stop users from accessing any Web sites that you have not specifically allowed, choose *Allow List* in the *URL Filter Type* drop-down box (Figure 55).

Figure 55 URL Filter Screen showing Allow List



To allow a specific site, enter the URL for that site. For example, to let your users browse a site called **`www.goodsite.com`**, enter **`www.goodsite.com`** or **`goodsite.com`** in one of the fields.

If goodsite.com has multiple sub-domains, such as **`this.goodsite.com`** and **`that.goodsite.com`** then you can either:

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- Allow them individually by entering **this.goodsite.com** in one field and **that.goodsite.com** in another.

  or

- Allow them by entering the keyword **goodsite.com** into one of the fields. This will allow all URLs containing the string **goodsite.com**. As well as allowing **this.goodsite.com** and **that.goodsite.com**, the keyword **goodsite.com** would allow sites that had the string goodsite.com in their URL, for example **xxxgoodsite.com**.

To filter a generic keyword enter it into one of the fields. You should exercise caution when choosing a keyword as sites that you may wish to block may be allowed if you choose too general a keyword.

The Gateway filters all traffic from domains that have been blocked using the URL filter. If need to access an external mail server, FTP server or other named device outside your network, you must list it in one of the allow fields.

You can filter up to 30 keywords and URLs.

Computers that should not be subject to URL filtering can be excluded by ticking the Bypass URL Filter checkbox in the PC Privileges setup screen. See "PC Privileges" *on* page 67.

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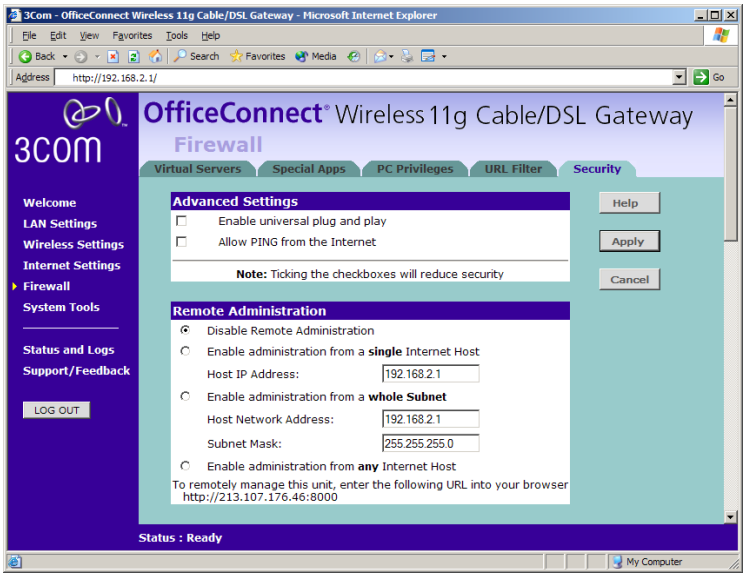
Security Select *Security* to display the Security screen (Figure 56).

Figure 56 Security Screen



The Internet connects millions of computer users throughout the world. The vast majority of the computer users on the Internet are friendly and have no intention of breaking into, stealing from, or damaging your network. However, there are hackers who may try to break into your network.

Enable universal plug and play Universal plug and play allows compatible software to read and change some the Gateway's firewall settings. This reduces the configuration required but lessens your control of the Gateway's firewall.

3Com recommends that you leave this feature disabled for maximum security.

Allow PING from the Internet PING is a utility, which is used to determine whether a device is active at the specified IP address. PING is normally used to test the physical connection between two devices, to ensure that everything is working correctly.

By default the Gateway has PING disabled in order to make the device more difficult to find on the Internet and less prone to attack.

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This feature is enabled by clicking on the check box so that a tick can be seen and then select *Apply*.

3Com recommends that you leave this disabled.

Enabling Remote Administration

It is possible to administer the Gateway remotely. This can be set to one of four different levels using the following options:

1. *Disable Remote Administration* - This option is set as default.
2. *Enable administration from a **single** Internet Host* - Only the specified IP address can manage the Gateway. Any other users will be rejected.
3. *Enable administration from a **whole subnet*** - This option allows a number of users within a subnet to administer the Gateway.
4. *Enable administration from **any** Internet Host* - This options allows any host to access the administration pages.

To remotely administer your Gateway, enter **`http://xxx.xxx.xxx.xxx:8000`** in the location bar of the browser running on the remote computer, where *xxx.xxx.xxx.xxx* is the Internet IP address of the Gateway. You may then login using the administration password.

Your Internet IP address can be found at the bottom of the screen. See Figure 56.

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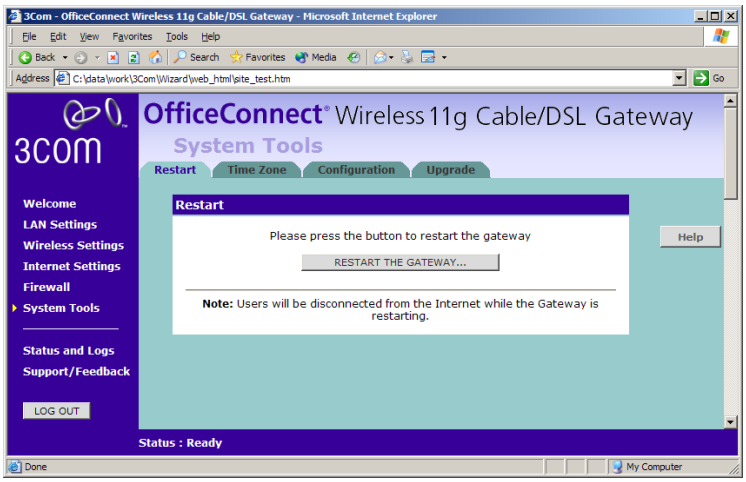
System Tools

The main frame of the System Tools screen includes four administration items: *Restart, Time Zone, Configuration,* and *Upgrade* (Figure 57).

Restart

Figure 57 Restart Screen



If your Gateway is not operating correctly, you can choose to restart the Gateway by selecting *Restart the Gateway*, simulating the effect of power cycling the unit. No configuration information will be lost but the log files will be erased. This function may be of use if you are experiencing problems and you wish to re-establish your Internet connection. Any network users who are currently accessing the Internet will have their access interrupted whilst the restart takes place, and they may need to reboot their computers when the restart has completed and the Gateway is operational again.

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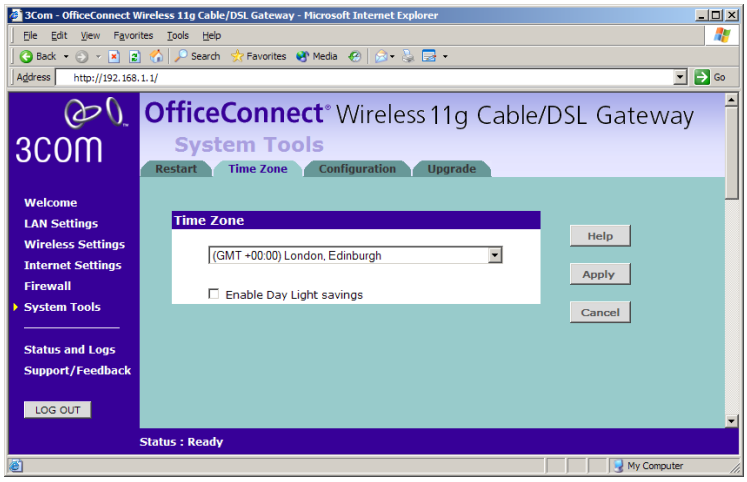
Time Zone

Figure 58 Time Zone Screen



Choose the time zone that is closest to your actual location. The time zone setting is used by the system clock when displaying the correct time in the log files.

If you use Daylight saving tick the Enable Daylight savings box, and then click *Apply* (Figure 58).

The Gateway reads the correct time from NTP servers on the Internet and sets its system clock accordingly. The Daylight Savings option merely advances the system clock by one hour. It does not cause the system clock to be updated for daylight savings time automatically.

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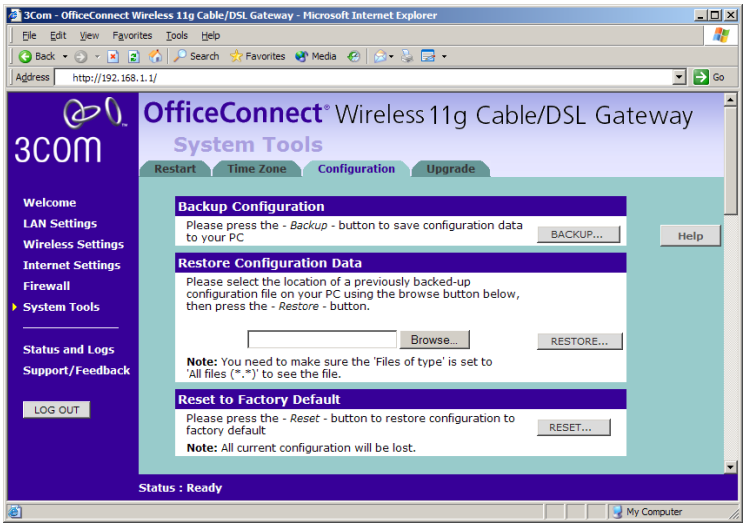
Configuration

Figure 59 Configuration Screen


3Com - OfficeConnect Wireless 11g Cable/DSL Gateway - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://192.168.1.1/
3com
OfficeConnect® Wireless 11g Cable/DSL Gateway
System Tools
Restart
Time Zone
Configuration
Upgrade
Welcome
LAN Settings
Wireless Settings
Internet Settings
Firewall
System Tools
Status and Logs
Support/Feedback
LOG OUT
Backup Configuration
Please press the - Backup - button to save configuration data to your PC
BACKUP...
Help
Restore Configuration Data
Please select the location of a previously backed-up configuration file on your PC using the browse button below, then press the - Restore - button.
Browse...
RESTORE...
Note: You need to make sure the 'Files of type' is set to 'All files (*.*)' to see the file.
Reset to Factory Default
Please press the - Reset - button to restore configuration to factory default
RESET...
Note: All current configuration will be lost.
Status : Ready
My Computer

Select the *Configuration* tab to display the *Configuration* screen (Figure 59).

Backup Configuration

Click *BACKUP* to save the current Gateway configuration. You will be prompted to download and save a file to disk.

Restore Configuration Data

If you want to reinstate the configuration settings previously saved to a file, press *Browse* to locate the backup file on your computer, and then click *RESTORE* to copy the data into the Gateway's memory.

The password will remain unchanged.

Reset to Factory Default

If you want to reset the settings on your Gateway to those that were loaded at the factory, click *RESET*. You will lose all your configuration changes. The Gateway LAN IP address will revert to 192.168.1.1, and the DHCP server on the LAN will be enabled. You may need to reconfigure and restart your computer to re-establish communication with the Gateway.

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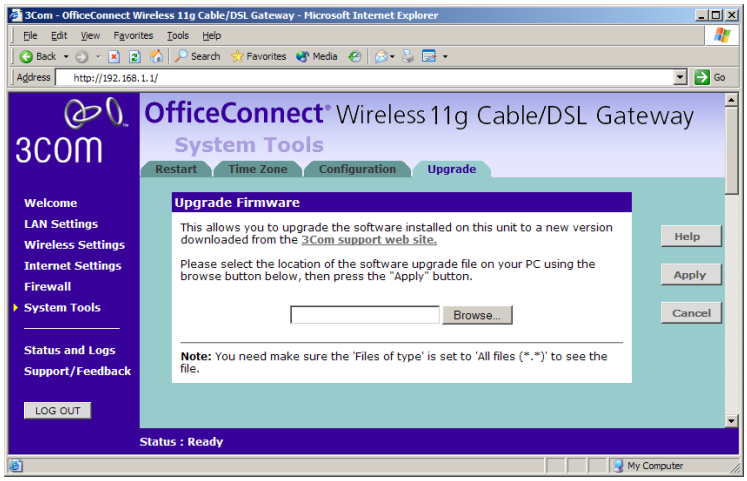
Upgrade

Figure 60 Upgrade Screen


3Com - OfficeConnect Wireless 11g Cable/DSL Gateway - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://192.168.1.1/
3Com
OfficeConnect Wireless 11g Cable/DSL Gateway
System Tools
Restart
Time Zone
Configuration
Upgrade
Welcome
LAN Settings
Wireless Settings
Internet Settings
Firewall
System Tools
Status and Logs
Support/Feedback
LOG OUT
Upgrade Firmware
This allows you to upgrade the software installed on this unit to a new version downloaded from the 3Com support web site.
Please select the location of the software upgrade file on your PC using the browse button below, then press the "Apply" button.
Browse...
Note: You need make sure the 'Files of type' is set to 'All files (*.*)' to see the file.
Help
Apply
Cancel
Status : Ready
My Computer

The Upgrade facility allows you to install on the Gateway any new releases of system software that 3Com may make available. To install new software, you first need to download the software from the 3Com support web site to a folder on your computer. Once you have done this, select *Browse* to tell your web browser where this file is on your computer, and then click *Apply*. The file will be copied to the Gateway, and once this has completed, the Gateway will restart. Although the upgrade process has been designed to preserve your configuration settings, it is recommended that you make a backup of the configuration beforehand, in case the upgrade process fails for any reason (for example, the connection between the computer and the Gateway is lost while the new software is being copied to the Gateway).

The upgrade procedure can take up to two minutes, and is complete when the Alert LED has stopped flashing and is permanently off. Make sure that you do not interrupt power to the Gateway during the upgrade procedure; if you do, the software may be corrupted and the Gateway may not start up properly afterwards. If the Alert LED comes on continuously after a failed upgrade, refer to Chapter 6, "Troubleshooting".

Status and Logs

Selecting *Status and Logs* from the main menu displays the *Status, Usage,* and *Logs* screens in your Web browser window.

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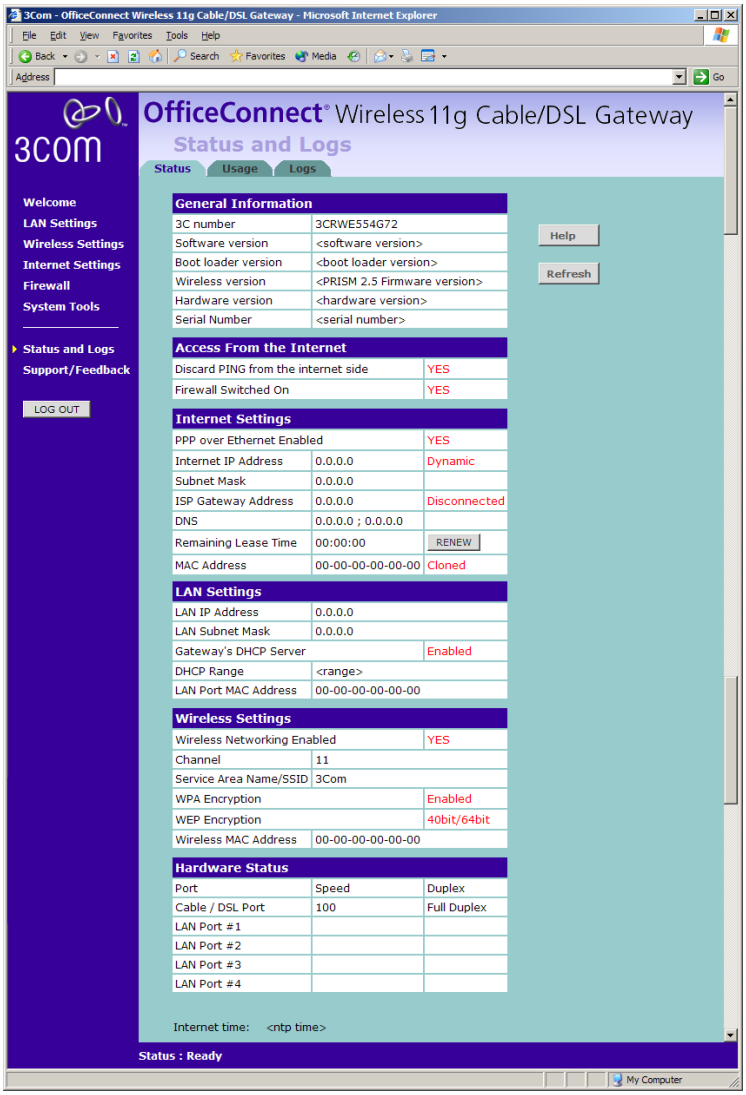
Status The *Status* screen displays a tabular representation of your network and Internet connection. (Figure 61)

Figure 61 Status Screen



Usage Usage displays an approximate count of the traffic since the Gateway was last reset. (Figure 62)

The counts are approximate and should be used as a guide only. Contact your ISP for accurate logging information.

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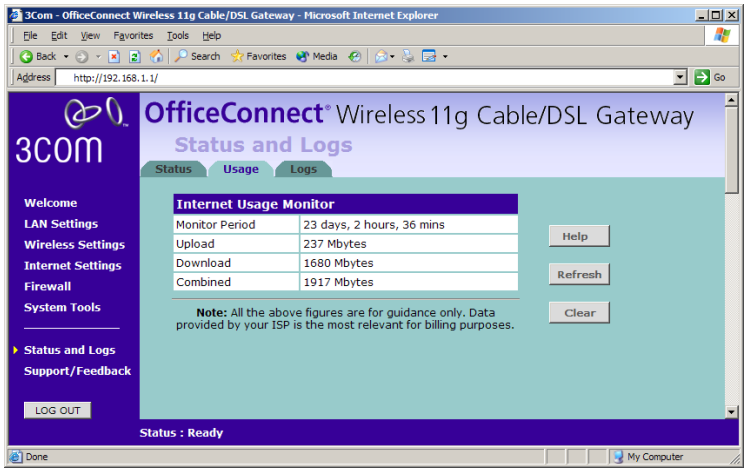
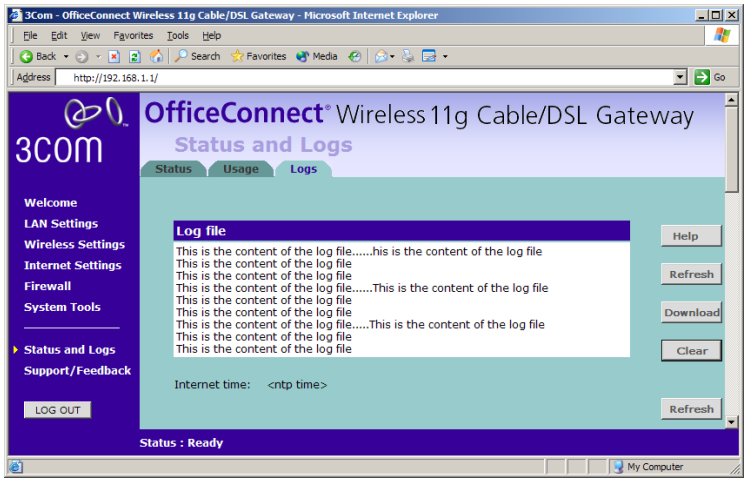
Figure 62 Usage Screen



Logs Logs will allow you to view both the normal events, and security threats logged by the Gateway.

Figure 63 Logs Screen


3Com - OfficeConnect Wireless 11g Cable/DSL Gateway - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address http://192.168.1.1/
3com
OfficeConnect Wireless 11g Cable/DSL Gateway
Status and Logs
Status Usage Logs
Welcome
LAN Settings
Wireless Settings
Internet Settings
Firewall
System Tools
Status and Logs
Support/Feedback
LOG OUT
Log file
This is the content of the log file.....his is the content of the log file
This is the content of the log file
This is the content of the log file
This is the content of the log file.....This is the content of the log file
This is the content of the log file
This is the content of the log file
This is the content of the log file.....This is the content of the log file
This is the content of the log file
This is the content of the log file
Internet time: <ntp time>
Help
Refresh
Download
Clear
Refresh
Status : Ready
My Computer

You may be asked to refer to the information on the Status and Logs screens if you contact your supplier for technical support.

Support/Feedback

Selecting *Support/Feedback* from the main menu displays the *Support* and *Feedback* screens.

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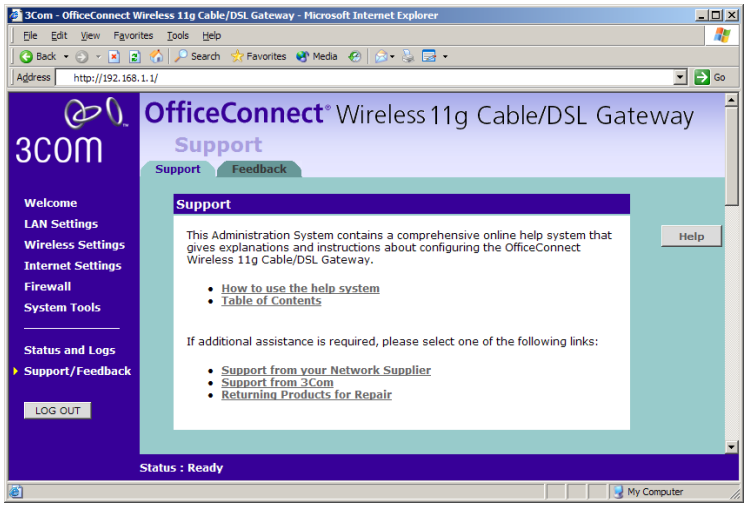
Support

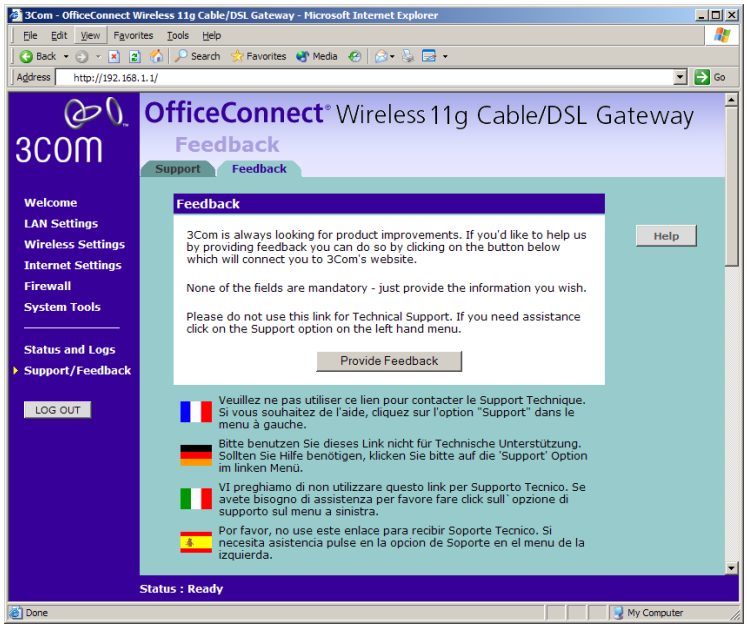
Figure 64 Support Screen



Selecting the *Support* option on the main menu displays the support links screen, which contains a list of Internet links that provide information and support concerning the Gateway (Figure 64).

Feedback

Figure 65 Feedback Screen


3Com - OfficeConnect Wireless 11g Cable/DSL Gateway - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites Media
Address http://192.168.1.1/
Go
3com
OfficeConnect® Wireless 11g Cable/DSL Gateway
Feedback
Support Feedback
Welcome
LAN Settings
Wireless Settings
Internet Settings
Firewall
System Tools
Status and Logs
Support/Feedback
LOG OUT
Feedback
3Com is always looking for product improvements. If you'd like to help us by providing feedback you can do so by clicking on the button below which will connect you to 3Com's website.
None of the fields are mandatory - just provide the information you wish.
Please do not use this link for Technical Support. If you need assistance click on the Support option on the left hand menu.
Provide Feedback
Help
Veuillez ne pas utiliser ce lien pour contacter le Support Technique. Si vous souhaitez de l'aide, cliquez sur l'option "Support" dans le menu à gauche.
Bitte benutzen Sie dieses Link nicht für Technische Unterstützung. Sollten Sie Hilfe benötigen, klicken Sie bitte auf die 'Support' Option im linken Menü.
VI preghiamo di non utilizzare questo link per Supporto Tecnico. Se avete bisogno di assistenza per favore fare click sull' opzione di supporto sul menu a sinistra.
Por favor, no use este enlace para recibir Soporte Tecnico. Si necesita asistencia pulse en la opcion de Soporte en el menu de la izquierda.
Status : Ready
Done
My Computer

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Selecting the *Feedback* option displays the Feedback screen and allows you to provide feedback to 3Com on the operation of your Gateway (Figure 65). This screen should not be used to obtain technical support.

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6 TROUBLESHOOTING

Basic Connection Checks

- Check that the Gateway is connected to your computers and to the cable/DSL modem, and that all the equipment is powered on. Check that the LAN Status and Cable/DSL Status LEDs on the Gateway are illuminated, and that any corresponding LEDs on the cable/DSL modem and the NIC are also illuminated.
- Ensure that the computers have completed their start-up procedure and are ready for use. Some network interfaces may not be correctly initialized until the start-up procedure has completed.
- If the link status LED does not illuminate for a port that is connected, check that you do not have a faulty cable. Try a different cable.

Browsing to the Gateway Configuration Screens

If you have connected your Gateway and computers together but cannot browse to the Gateway configuration screens, check the following:

- Confirm that the physical connection between your computer and the Gateway is OK, and that the LAN Status LEDs on the Gateway and NIC are illuminated and indicating the same speed (10Mbps or 100Mbps). Some NICs do not have status LEDs, in which case a diagnostic program may be available that can give you this information.
- Ensure that you have configured your computer as described in Chapter 3, *Setting Up Your Computers*. Restart your computer while it is connected to the Gateway to ensure that your computer receives an IP address.
- When entering the address of the Gateway into your web browser, ensure that you use the full URL including the http:// prefix (e.g. **`http://192.168.1.1`**).
- Ensure that you do not have a Web proxy enabled on your computer. Go to the *Control Panel* and click on *Internet Options*. Select the

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Connections tab and click on the *LAN Settings* button at the bottom. Make sure that the *Proxy Server* option is unchecked.

- If you cannot browse to the Gateway, use the *winipcfg* utility in Windows 95/98/ME to verify that your computer has received the correct address information from the Gateway. From the *Start* menu, choose *Run* and then enter **`winipcfg`**. Check that the computer has an IP address of the form 192.168.1.xxx (where xxx is in the range 2-254), the subnet mask is 255.255.255.0, and the default Gateway is 192.168.1.1 (the address of the Gateway). If these are not correct, use the *Release* and *Renew* functions to obtain a new IP address from the Gateway. Under Windows 2000, use the *ipconfig* command-line utility to perform the same functions.
- If you still cannot browse to the Gateway, then use the Discovery program on the accompanying CD-ROM as described in Appendix A.

Connecting to the Internet

If you can browse to the Gateway configuration screens but cannot access sites on the Internet, check the following:

- Confirm that the physical connection between the Gateway and the cable/DSL modem is OK, and that the link status LEDs on both Gateway and modem are illuminated.
- Confirm that the connection between the modem and the cable/DSL interface is OK.
- Ensure that you have entered the correct information into the Gateway configuration screens as required by your Internet Service Provider. Use the "Internet Settings" screen to verify this.
- For DSL users, check that the PPPoE or PPTP user name, password and service name are correct, if these are required. Only enter a PPPoE service name if your ISP requires one.
- For cable users, check whether your ISP requires a fixed MAC (Ethernet) address. If so, use the *Clone MAC Address* feature in the Gateway to ensure that the correct MAC address is presented, as described on page 60.
- For cable users, check whether your ISP requires a fixed *Host Name*. If so, enter the required *Host Name* in the *Internet Settings* screen.
- Ensure that your computers are not configured to use a Web proxy. On Windows computers, this can be found under *Control Panel* > *Internet Options* > *Connections*.

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Forgotten Password and Reset to Factory Defaults

If you can browse to the Gateway configuration screen but cannot log on because you do not know or have forgotten the password, follow the steps below to reset the Gateway to it's factory default configuration.

CAUTION: *All your configuration changes will be lost, and you will need to run the configuration wizard again before you can re-establish your Gateway connection to the Internet. Also, other computer users will lose their network connections whilst this process is taking place, so choose a time when this would be convenient.*

1. Remove power from the Gateway.
2. Disconnect all your computers and the cable/DSL modem from the Gateway.
3. Using a straight through Ethernet cable, connect the Ethernet Cable/DSL port on the rear of the Gateway to any one of the LAN ports.
4. Re-apply power to the Gateway. The Alert LED will flash as the Gateway starts up, and after approximately 30 seconds will start to flash more slowly (typically 2 seconds on, 2 seconds off). Once the Alert LED has started to flash slowly, remove power from the Gateway.
5. Remove the cable connecting the Cable/DSL port to the LAN port, and reconnect one of your computers to one of the Gateway LAN ports.
6. Re-apply power to the Gateway, and when the start-up sequence has completed, browse to:

   `http://192.168.1.1`

   and run the configuration wizard. You may need to restart your computer before you attempt this.
7. When the configuration wizard has completed, you may reconnect your network as it was before.

Wireless Networking

- Ensure that you have an 802.11b or 802.11g wireless adapter for each wireless computer, and that it is correctly installed and configured. Verify that each Wireless computer has either Windows 95 or higher or MAC OS 8.5 or higher.
- Verify that your wireless computers are configured to work in Infrastructure mode and not Ad Hoc mode. The Gateway contains an Access Point that is designed to operate in Infrastructure mode. Ad Hoc mode is not supported by the Gateway.

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- If you have a wired and a wireless NIC in the same computer, ensure that the wired NIC is disabled.
- Check the status of the Gateway Wireless LED, it should be lit if wireless is enabled and will flash when there is wireless activity. If not lit go to "Wireless Settings" on page 47 and enable wireless networking.
- Ensure that the TCP/IP settings for all devices are correct.
- Ensure that the Wireless Clients are using the same SSID or Service Area Name as the Gateway. The SSID is case-sensitive
- Ensure that the encryption method and level that you use on your clients are the same as those configured on the Gateway. The Gateway can simultaneously support WPA and WEP encryption, but can only support one configuration of each.
- Ensure that you have the Wireless computer enabled in the list of allowed MAC addresses if you are using Wireless Connection control on the Gateway.
- If you are having difficulty connecting or are operating at a low speed try changing the antenna positions on the rear of the Gateway. For more effective coverage you can try reorientating your antennae. Place one antenna vertically and one horizontally to improve coverage. Additionally consider moving the wireless computer closer to the Gateway to confirm that the building structure or fittings are not adversely affecting the connectivity. If this resolves the problem consider relocating the Wireless computer or the Gateway, or trying a different channel on the Gateway.
- Sources of interference: The 2.4Ghz ISM band is used for 802.11b and 802.11g. This is generally a licence free band for low power applications, and you may have other devices at your location that operate in this frequency band. You should take care to ensure that there are no devices like microwave ovens for example close to the Gateway or wireless computers as this could affect receiver sensitivity and reduce the performance of your network. If you are unsure try relocating both the wireless computers and the Gateway to establish whether this problem exists.
- Most wireless computer Adapters will scan the channels for the wireless Gateway. If a wireless computer has not located the Gateway then try initiating a search manually if the client software supports this feature or manually set the channel on your wireless computer to

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correspond to the Gateway channel number. Please refer to your Wireless computer adapter documentation and vendor to do this.

- Speed of connection: The 802.11b and 802.11g standards will automatically choose the best speed depending on the quality of your connection. As the signal quality weakens then the speed falls back to a lower speed. The speeds supported by 802.11g are 54 Mbps, 48 Mbps, 36 Mbps, 24 Mbps, 18 Mbps, 12 Mbps, and 6 Mbps. The speeds supported by 802.11b are 11 Mbps, 5.5 Mbps, 2 Mbps and 1 Mbps. In general the closer you are to the Gateway the better the speed. If you are not achieving the speed you had anticipated then try moving the antenna on the Gateway or moving the Wireless computer closer to the Gateway. In an ideal network the Gateway should be located in the centre of the network with Wireless computers distributed around it. Applications are generally available with the computer wireless card to carry out a site survey. Use this application to find the optimal siting for your wireless computer. Consult your Computer Card documentation and vendor for more details.

Power LED or Power Adapter OK LED Not Lit

- Check that your Gateway is receiving power by looking at the status of the Power LED on the front panel and the Power Adapter OK LED on the rear panel:
  - If both LEDs are lit green then the unit is receiving power.
  - If both LEDs are unlit then no power is being supplied to the unit. Check that the power adapter is plugged into a working mains outlet and that the mains outlet is supplying power. If the mains socket is supplying power then the power adapter or power adapter connection may be faulty. See "Replacement Power Adapters" below.
  - If the Power Adapter OK LED is lit but the Power LED is unlit then there may be a fault with your unit. Contact 3Com Technical Support.
- Check that you are using the correct power adapter for your Gateway. You should only use the power adapter supplied with your Gateway.

Replacement Power Adapters

If both the Power Adapter OK LED and Power LED are off, check your power adapter connection. If the mains outlet is working and is capable of supplying power to other devices, contact 3Com Technical Support and ask for a replacement power adapter. Please quote the power

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adapter part number shown on the OfficeConnect power adapter you are using.

Alternatively, quote the part number for your region:

Table 3 Power Adapter Part Numbers

Part Number	Region
3C16740A	US and Canada
3C16741A	UK
3C16742A	Europe and Middle East
3C16743A	Japan
3C16744A	Australasia (except Japan and Korea)
3C16745A	South Africa
3C16747A	Korea
3C16748A	Argentina

Alert LED

The Alert LED will flash when the Gateway unit is first powered up while the system software checks the hardware for proper operation. Once the Gateway has started normal operation, the Alert LED will go out.

- If the Alert LED does not go out following start up, but illuminates continuously, this indicates that the software has detected a possible fault with the hardware. Remove power from the Gateway, wait 10 seconds and then re-apply power. If the Alert LED comes on continuously again, then a fault has been detected. Locate the copy of the Gateway software on the accompanying CD-ROM or 3Com web site (**`http://www.3com.com`**) and upload it to the Gateway to see if this clears the fault (refer to "Recovering from Corrupted Software" below). If this does not fix the problem, contact your supplier for further advice.
- During normal operation, you may notice the Alert LED lighting briefly from time to time. This indicates that the Gateway has detected a hacker attack from the Internet and has prevented it from harming your network. You need take no specific action on this, unless you decide that these attacks are happening frequently in which case you may wish to discuss this with your ISP. The Gateway logs such attacks, and this information is available through the Status and Logs screens.

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Recovering from Corrupted Software

If the Alert LED remains permanently on following power-up, it is possible that the system software has become corrupted. In this condition, the Gateway will enter a "recovery" state; DHCP is disabled, and the LAN IP address is set to 192.168.1.1. Follow the instructions below to upload a new copy of the system software to a Gateway unit in this state.

Ensure that one of your computers has a copy of the new software image file stored on its hard disk or available on CD-ROM.

The latest software is available on 3Com's Web site at:

`www.3com.com`.

1. Remove power from the Gateway and disconnect the Cable/DSL modem and all your computers, except for the one computer with the software image.
2. You will need to reconfigure this computer with the following static IP address information:
   - IP address: 192.168.1.2
   - Subnet mask: 255.255.255.0
   - Default Gateway address: 192.168.1.1
3. Restart the computer, and re-apply power to the Gateway.
4. Using the Web browser on the computer, enter the following URL in the location bar:

   `http://192.168.1.1`.

   This will connect you to the Microcode Recovery utility in the Gateway.
5. Follow the on-screen instructions. Enter the path and filename of the software image file.
6. When the upload has completed, the Gateway will restart, run the self-test and, if successful, resume normal operation. The Alert LED will go out.
7. Refer to the Installation Guide to reconnect your Gateway to the Cable/DSL modem and the computers in your network. Do not forget to reconfigure the computer you used for the software upload.

   If the Gateway does not resume normal operation following the upload, it may be faulty. Contact your supplier for advice.

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Frequently Asked Questions

How do I reset the Gateway to Factory Defaults?

See "Forgotten Password and Reset to Factory Defaults" on page 85.

How many computers on the LAN does the Gateway support?

A maximum of 253 computers on the LAN are supported.

How many wireless clients does the Wireless Cable/DSL Gateway support?

A maximum of 128 wireless clients are supported.

There are only 4 LAN ports on the Gateway. How are additional computers connected?

You can expand the number of connections available on your LAN by using hubs, switches and wireless access points connected to the Gateway. 3Com wireless access points and OfficeConnect hubs and switches provide a simple, reliable means of expanding your network; contact your supplier for more information, or visit:

http://www.3com.com/

Does the Gateway support virtual private networks (VPNs)?

The Gateway supports VPN passthrough, which allows VPN clients on the LAN to communicate with VPN hosts on the Internet. It is also possible to set up VPN hosts on your LAN that clients elsewhere on the Internet can connect to, but this is not a recommended configuration.

Where can I download software updates for the Gateway?

Updates to the Gateway software are posted on the 3Com support web site, accessible by visiting:

http://www.3com.com

What other online resources are there?

The 3Com Knowledgebase at:

http://knowledgebase.3com.com

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is a database of technical information covering all 3Com products. It is updated daily with information from 3Com technical support services, and it is available 24 hours a day, 7 days a week.

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A USING DISCOVERY

Running the Discovery Application

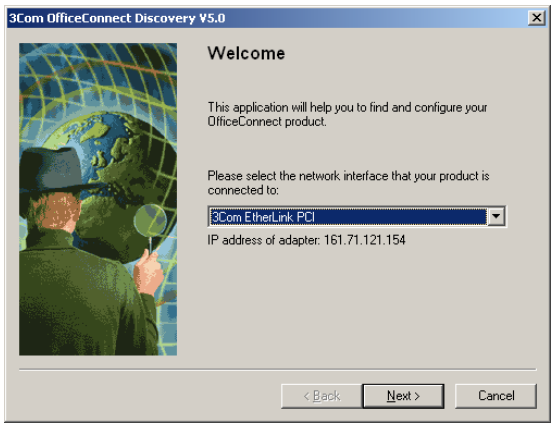
3Com provides a user friendly Discovery application for detecting the Gateway on the network.

Windows Installation (95/98/2000/Me/NT)

1 Insert the Gateway CD-ROM in the CD-ROM drive on your computer. A menu will appear; select *Gateway Discovery*.

Discovery will find the Gateway even if it is unconfigured or misconfigured.

Figure 66 Discovery Welcome Screen


3Com OfficeConnect Discovery V5.0
Welcome
This application will help you to find and configure your OfficeConnect product.
Please select the network interface that your product is connected to:
3Com EtherLink PCI
IP address of adapter: 161.71.121.154
< Back
Next >
Cancel

2 When the *Welcome* screen is displayed click on *Next* and wait until the application discovers the Gateways connected to your LAN.

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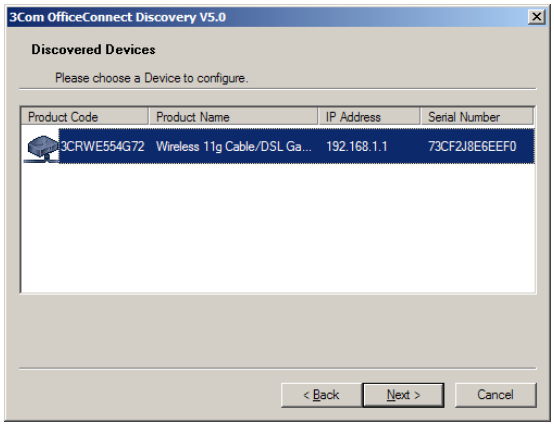
Figure 67 Discovered Gateway Screen



3 Figure 68 shows an example Discovered Devices screen. Highlight the *Wireless Cable/DSL Gateway* by clicking on it, and press *Next*.

Figure 68 Discovery Finish Screen

3Com OfficeConnect Discovery V5.0
Completing the OfficeConnect Discovery Application
Communication with your OfficeConnect Device has been successful.
You are now ready to configure the Device using its set-up Wizard.
If you lose contact with the Device you should re-launch the Discovery application.
To exit the application and launch the set-up Wizard for your Device, click Finish.
< Back
Finish
Cancel

4 Click on *Finish* to launch a web browser and display the login page for the Gateway.

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B IP ADDRESSING

The Internet Protocol Suite

The Internet protocol suite consists of a well-defined set of communications protocols and several standard application protocols. Transmission Control Protocol/Internet Protocol (TCP/IP) is probably the most widely known and is a combination of two of the protocols (IP and TCP) working together. TCP/IP is an internationally adopted and supported networking standard that provides connectivity between equipment from many vendors over a wide variety of networking technologies.

Managing the Gateway over the Network

To manage a device over the network, the Gateway must be correctly configured with the following IP information:

- An IP address
- A Subnet Mask

IP Addresses and Subnet Masks

Each device on your network must have a unique IP address to operate correctly. An IP address identifies the address of the device to which data is being sent and the address of the destination network. IP addresses have the format n.n.n.x where n is a decimal number between 0 and 255 and x is a number between 1 and 254 inclusive.

However, an IP Address alone is not enough to make your device operate. In addition to the IP address, you need to set a subnet mask. All networks are divided into smaller sub-networks and a subnet mask is a number that enables a device to identify the sub-network to which it is connected.

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For your network to work correctly, all devices on the network must have:

- The same sub-network address.
- The same subnet mask.

The only value that will be different is the specific host device number. This value must always be unique.

An example IP address is '192.168.100.8'. However, the size of the network determines the structure of this IP Address. In using the Gateway, you will probably only encounter two types of IP Address and subnet mask structures.

Type One

In a small network, the IP address of '192.168.100.8' is split into two parts:

- Part one ('192.168.100') identifies the network on which the device resides.
- Part two ('.8') identifies the device within the network.

This type of IP Address operates on a subnet mask of '255.255.255.0'.

See Table 4 for an example about how a network with three computers and a Gateway might be configured.

Table 4 IP Addressing and Subnet Masking

Device	IP Address	Subnet Mask
PC 1	192.168.100.8	255.255.255.0
PC 2	192.168.100.33	255.255.255.0
PC 3	192.168.100.188	255.255.255.0
Gateway	192.168.100.72	255.255.255.0

Type Two

In larger networks, where there are more devices, the IP address of '192.168.100.8' is, again, split into two parts but is structured differently:

- Part one ('192.168') identifies the network on which the device resides.
- Part two ('.100.8') identifies the device within the network.

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This type of IP Address operates on a subnet mask of '255.255.0.0'.

See Table 5 for an example about how a network (only four computers represented) and a Gateway might be configured.

Table 5 IP Addressing and Subnet Masking

Device	IP Address	Subnet Mask
PC 1	192.168.100.8	255.255.0.0
PC 2	192.168.201.30	255.255.0.0
PC 3	192.168.113.155	255.255.0.0
PC 4	192.168.002.230	255.255.0.0
Gateway	192.168.002.72	255.255.0.0

How does a Device Obtain an IP Address and Subnet Mask?

There are three different ways to obtain an IP address and the subnet mask. These are:

- Dynamic Host Configuration Protocol (DHCP) Addressing
- Static Addressing
- Automatic Addressing (Auto-IP Addressing)

DHCP Addressing

The Gateway contains a DHCP server, which allows computers on your network to obtain an IP address and subnet mask automatically. DHCP assigns a temporary IP address and subnet mask which gets reallocated once you disconnect from the network.

DHCP will work on any client Operating System such as Windows® 95, Windows 98 or Windows NT 4.0. Also, using DHCP means that the same IP address and subnet mask will never be duplicated for devices on the network. DHCP is particularly useful for networks with large numbers of users on them.

Static Addressing

You must enter an IP Address and the subnet mask manually on every device. Using a static IP and subnet mask means the address is permanently fixed.

Auto-IP Addressing

Network devices use automatic IP addressing if they are configured to acquire an address using DHCP but are unable to contact a DHCP server. Automatic IP addressing is a scheme where devices allocate themselves

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an IP address at random from the industry standard subnet of 169.254.x.x (with a subnet mask of 255.255.0.0). If two devices allocate themselves the same address, the conflict is detected and one of the devices allocates itself a new address.

Automatic IP addressing support was introduced by Microsoft in the Windows 98 operating system and is also supported in Windows 2000.

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C TECHNICAL SPECIFICATIONS

This section lists the technical specifications for the OfficeConnect Wireless 11g Cable/DSL Gateway.

Wireless 11g Cable/DSL Gateway

Interfaces

Cable/DSL modem connection — 10Mbps/100Mbps dual speed Ethernet port (10BASE-T/100BASE-TX)

LAN connection — four 10Mbps/100Mbps dual speed Ethernet ports (10BASE-T/100BASE-TX)

WLAN Interfaces

Standard IEEE 802.11g, Direct Sequence Spread Spectrum (DSSS)
Transmission rate: 54Mbps, automatic fallback to 48, 36, 24, 18, 12, or 6 Mbps
Maximum channels: 14
Range up to 304.8m (1000ft)
Frequency: (US/Canada/Europe) 2.400-2.4835 GHz
Sensitivity: 6, 12, 18, 24, 36, 48 Mbps: -85 dBm;
54 Mbps -66 dBm typical
Modulation: CCK, BPSK, QPSK, OFDM
Encryption: 40/64 bit WEP, 128 bit WEP, WPA
Maximum clients: 128
O/P Power: 18dBm

Standard IEEE 802.11b, Direct Sequence Spread Spectrum (DSSS)
Transmission rate: 11bps, automatic fallback to 5.5, 2, or 1 Mbps
Maximum channels: 14
Range up to 304.8m (1000ft)
Frequency: (US/Canada/Europe) 2.400-2.4835 GHz
Sensitivity: 1, 2, 5.5 Mbps: -85 dBm; 11 Mbps -82 dBm typical
Modulation: CCK, BPSK, QPSK, OFDM

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Encryption: 40/64 bit WEP, 128 bit WEP, WPA
Maximum clients: 128
O/P Power 18dBm

Operating Temperature

0 °C to 40 °C (32 °F to 105 °F)

Power

7VA, 23.9 BThU/hr

Humidity

0 % to 90 % (non-condensing) humidity

Dimensions

- Width = 220 mm (8.7 in.)
- Depth = 135 mm (5.3 in.)
- Height = 24 mm (1 in.)

Weight

Approximately 500 g (1.1 lbs)

Standards

Functional:	ISO 8802/3 IEEE 802.3 IEEE 802.11b, 802.11g, Wi-Fi
Safety:	UL60950 CSA 22.2 #60950 IEC 60950 EN 60950
EMC:	EN 55022 Class B EN 55024 CISPR 22 FCC Part 15 Class B* ICES-003 Class B CNS 13438 Class A ETSI EN 301 489–17
Radio	CFR 47 FCC Part 15.207, 15.209, 15.247 and 15.249. ETS 300 328 (2.4 GHz ISM band wide band transmission

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systems.
RSS-210

Environmental: EN 60068 (IEC 68)

*See "FCC Statement" on page 121 for conditions of operation.

System Requirements

Operating Systems

The Gateway will support the following Operating Systems:

- Windows 95/98
- Windows NT 4.0
- Windows ME
- Windows 2000
- Windows XP
- Mac OS 8.5 or higher
- Unix

Ethernet Performance

The Gateway complies to the IEEE 802.3i, u and x specifications.

Wireless Performance

The Gateway has been designed to conform to the Wi-Fi interoperability test standard.

Wi Fi™
The Standard for Wireless Fidelity.

Cable Specifications

The Gateway supports the following cable types and maximum lengths:

- Category 3 (Ethernet) or Category 5 (Fast Ethernet or Dual Speed Ethernet) Twisted Pair — shielded and unshielded cable types.
- Maximum cable length of 100m (327.86 ft).

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D SAFETY INFORMATION

Important Safety Information

***WARNING**: Warnings contain directions that you must follow for your personal safety. Follow all directions carefully.*
You must read the following safety information carefully before you install or remove the unit:

***WARNING**: The Gateway generates and uses radio frequency (rf) energy. In some environments, the use of rf energy is not permitted. The user should seek local advice on whether or not rf energy is permitted within the area of intended use.*

***WARNING**: Exceptional care must be taken during installation and removal of the unit.*

***WARNING**: Only stack the Gateway with other OfficeConnect units.*

***WARNING**: To ensure compliance with international safety standards, only use the power adapter that is supplied with the unit.*

***WARNING**: The socket outlet must be near to the unit and easily accessible. You can only remove power from the unit by disconnecting the power cord from the outlet.*

***WARNING**: This unit operates under SELV (Safety Extra Low Voltage) conditions according to IEC 60950. The conditions are only maintained if the equipment to which it is connected also operates under SELV conditions.*

***WARNING**: There are no user-replaceable fuses or user-serviceable parts inside the Gateway. If you have a physical problem with the unit that cannot be solved with problem solving actions in this guide, contact your supplier.*

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***WARNING**: Disconnect the power adapter before moving the unit.*

***WARNING: RJ-45 ports.** These are shielded RJ-45 data sockets. They cannot be used as telephone sockets. Only connect RJ-45 data connectors to these sockets.*

Wichtige Sicherheitshinweise

***VORSICHT:** Warnhinweise enthalten Anweisungen, die Sie zu Ihrer eigenen Sicherheit befolgen müssen. Alle Anweisungen sind sorgfältig zu befolgen.*
Sie müssen die folgenden Sicherheitsinformationen sorgfältig durchlesen, bevor Sie das Geräts installieren oder ausbauen:

***VORSICHT:** Der Gateway erzeugt und verwendet Funkfrequenz (RF). In manchen Umgebungen ist die Verwendung von Funkfrequenz nicht gestattet. Erkundigen Sie sich bei den zuständigen Stellen, ob die Verwendung von Funkfrequenz in dem Bereich, in dem der Bluetooth Access Point eingesetzt werden soll, erlaubt ist.*

***VORSICHT:** Bei der Installation und beim Ausbau des Geräts ist mit höchster Vorsicht vorzugehen.*

***VORTSICHT:** Stapeln Sie das Geräts nur mit anderen OfficeConnect Gerätes zusammen.*

***VORSICHT:** Aufgrund von internationalen Sicherheitsnormen darf das Gerät nur mit dem mitgelieferten Netzadapter verwendet werden.*

***VORSICHT:** Die Netzsteckdose muß in der Nähe des Geräts und leicht zugänglich sein. Die Stromversorgung des Geräts kann nur durch Herausziehen des Gerätenetzkabels aus der Netzsteckdose unterbrochen werden.*

***VORSICHT:** Der Betrieb dieses Geräts erfolgt unter den SELV-Bedingungen (Sicherheitskleinstspannung) gemäß IEC 60950. Diese Bedingungen sind nur gegeben, wenn auch die an das Gerät angeschlossenen Geräte unter SELV-Bedingungen betrieben werden.*

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VORSICHT: *Es sind keine von dem Benutzer zu ersetzende oder zu wartende Teile in dem Gerät vorhanden. Wenn Sie ein Problem mit dem Gateway haben, das nicht mittels der Fehleranalyse in dieser Anleitung behoben werden kann, setzen Sie sich mit Ihrem Lieferanten in Verbindung.*

VORSICHT: *Vor dem Ausbau des Geräts das Netzadapterkabel herausziehen.*

VORSICHT: RJ-45-Anschlüsse. *Dies sind abgeschirmte RJ-45-Datenbuchsen. Sie können nicht als Telefonanschlußbuchsen verwendet werden. An diesen Buchsen dürfen nur RJ-45-Datenstecker angeschlossen werden.*

Consignes importantes de sécurité

AVERTISSEMENT: *Les avertissements présentent des consignes que vous devez respecter pour garantir votre sécurité personnelle. Vous devez respecter attentivement toutes les consignes.*
Nous vous demandons de lire attentivement les consignes suivantes de sécurité avant d'installer ou de retirer l'appareil:

AVERTISSEMENT: *La Gateway fournit et utilise de l'énergie radioélectrique (radio fréquence -rf). L'utilisation de l'énergie radioélectrique est interdite dans certains environnements. L'utilisateur devra se renseigner sur l'autorisation de cette énergie dans la zone prévue.*

AVERTISSEMENT: *Faites très attention lors de l'installation et de la dépose du groupe.*

AVERTISSEMENT: *Seulement entasser le moyer avec les autres moyeux OfficeConnects.*

AVERTISSEMENT: *Pour garantir le respect des normes internationales de sécurité, utilisez uniquement l'adaptateur électrique remis avec cet appareil.*

AVERTISSEMENT: *La prise secteur doit se trouver à proximité de l'appareil et son accès doit être facile. Vous ne pouvez mettre l'appareil hors circuit qu'en débranchant son cordon électrique au niveau de cette prise.*

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AVERTISSEMENT: *L'appareil fonctionne à une tension extrêmement basse de sécurité qui est conforme à la norme CEI 60950. Ces conditions ne sont maintenues que si l'équipement auquel il est raccordé fonctionne dans les mêmes conditions.*

AVERTISSEMENT: *Il n'y a pas de parties remplaceables par les utilisateurs ou entretenues par les utilisateurs à l'intérieur du moyeu. Si vous avez un problème physique avec le moyeu qui ne peut pas être résolu avec les actions de la résolution des problèmes dans ce guide, contacter votre fournisseur.*

AVERTISSEMENT: *Débranchez l'adaptateur électrique avant de retirer cet appareil.*

AVERTISSEMENT: Ports RJ-45. *Il s'agit de prises femelles blindées de données RJ-45. Vous ne pouvez pas les utiliser comme prise de téléphone. Branchez uniquement des connecteurs de données RJ-45 sur ces prises femelles.*

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F ISP INFORMATION

Information Regarding Popular ISPs

WAN Types	Characteristics	Popular ISPs
Dynamic IP (Clone MAC)	Cable modem ISP, non-hostname based. Need to clone the MAC address in the Advanced tab of the Internet Settings page.	MediaOne, RoadRunner, Optimum Online, Time Warner, Charter, Adelphia, Metrocast.
Dynamic IP (Hostname)	Cable ISP, Requires Hostname to authenticate ie. cx213818-B. Need to enter the hostname in the Internet Settings page.	@Home Network, Cogoco, ComCast, Cox, Excite, Rogers, Shaw, Insight, Videotron
PPPoE (DSL)	Usually special software installed on PC, MacPOET/WinPOET, EnterNet 300. The Gateway has this software built in and you can remove it from your PC. You will need to enter the user name and password that your ISP provided to you in the PPPoE page of the Gateway. Leave the service name blank unless your ISP requires it.	Bell*, Century Tel, Citizens, Primus, Prodigy, Snet, Sprint FC, Verizon, First World, Brightnet, Earthlink, Ameritech, Covad, Mindspring, Sympatico DSL, USwest, Owest, SNet
PPTP	Cable or DSL, always on. Some European ISPs require a PPTP tunnel to authenticate their network.	KPN (Netherlands), Austria Telecom

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Static (DSL)	DSL Modem, always on. Need to enter ALL IP information from ISP in the Static IP address section of the Internet Settings page.	CableSpeed, Cnet, Direct Link, Drizzle, DSL Extreme, Earthlink Wireless, Fast Point, Flashcom, GTE-WhirlWind, Heavenet, HSA Corp, I-55, InterAccess, LinkLine, Mission, Nauticom, NAS, Omitel, Onterra, Phatpipe, Rhythms, Speakeasy, Sterling, XO, Zyan
Static (Cable)	Cable Modem, Always on, ISP assigns specific IP information which needs to be entered on the "Fixed IP" page of the Gateway.	Cox Cable, Sprint, US Cable, Cable-Cable

*Bell includes Bell Advantage, Bell Canada, Bell South, PacBell and Southwestern Bell.

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GLOSSARY

802.11b The IEEE specification for wireless Ethernet which allows speeds of up to 11 Mbps. The standard provides for 1, 2, 5.5 and 11 Mbps data rates. The rates will switch automatically depending on range and environment.

802.11g The IEEE specification for wireless Ethernet which allows speeds of up to 54 Mbps. The standard provides for 6, 12, 24, 36, 48 and 54 Mbps data rates. The rates will switch automatically depending on range and environment.

10BASE-T The IEEE specification for 10 Mbps Ethernet over Category 3, 4 or 5 twisted pair cable.

100BASE-TX The IEEE specification for 100 Mbps Fast Ethernet over Category 5 twisted-pair cable.

Access Point An Access Point is a device through which wireless clients connect to other wireless clients and which acts as a bridge between wireless clients and a wired network, such as Ethernet. Wireless clients can be moved anywhere within the coverage area of the access point and still connect with each other. If connected to an Ethernet network, the access point monitors Ethernet traffic and forwards appropriate Ethernet messages to the wireless network, while also monitoring wireless client radio traffic and forwarding wireless client messages to the Ethernet LAN.

Ad Hoc mode Ad Hoc mode is a configuration supported by most wireless clients. It is used to connect a peer to peer network together without the use of an access point. It offers lower performance than infrastructure mode, which is the mode the gateway uses. (see also Infrastructure mode.)

Auto-negotiation Some devices in the OfficeConnect range support auto-negotiation. Auto-negotiation is where two devices sharing a link, automatically

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configure to use the best common speed. The order of preference (best first) is: 100BASE-TX full duplex, 100BASE-TX half duplex, 10BASE-T full duplex, and 10BASE-T half duplex. Auto-negotiation is defined in the IEEE 802.3 standard for Ethernet and is an operation that takes place in a few milliseconds.

Bandwidth The information capacity, measured in bits per second, that a channel can transmit. The bandwidth of Ethernet is 10 Mbps, the bandwidth of Fast Ethernet is 100 Mbps. The bandwidth for 802.11b wireless is 11Mbps.

Category 3 Cables One of five grades of Twisted Pair (TP) cabling defined by the EIA/TIA-586 standard. Category 3 is voice grade cable and can only be used in Ethernet networks (10BASE-T) to transmit data at speeds of up to 10 Mbps.

Category 5 Cables One of five grades of Twisted Pair (TP) cabling defined by the EIA/TIA-586 standard. Category 5 can be used in Ethernet (10BASE-T) and Fast Ethernet networks (100BASE-TX) and can transmit data up to speeds of 100 Mbps. Category 5 cabling is better to use for network cabling than Category 3, because it supports both Ethernet (10 Mbps) and Fast Ethernet (100 Mbps) speeds.

Channel Similar to any radio device, the OfficeConnect Wireless Cable/DSL gateway allows you to choose different radio channels in the wireless spectrum. A channel is a particular frequency within the 2.4GHz spectrum within which the Gateway operates.

Client The term used to described the desktop PC that is connected to your network.

DHCP Dynamic Host Configuration Protocol. This protocol automatically assigns an IP address for every computer on your network. Windows 95, Windows 98 and Windows NT 4.0 contain software that assigns IP addresses to workstations on a network. These assignments are made by the DHCP server software that runs on Windows NT Server, and Windows 95 and Windows 98 will call the server to obtain the address. Windows 98 will allocate itself an address if no DHCP server can be found.

DNS Server Address DNS stands for Domain Name System, which allows Internet host computers to have a domain name (such as 3com.com) and one or more

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IP addresses (such as 192.34.45.8). A DNS server keeps a database of host computers and their respective domain names and IP addresses, so that when a domain name is requested (as in typing "3com.com" into your Internet browser), the user is sent to the proper IP address. The DNS server address used by the computers on your home network is the location of the DNS server your ISP has assigned.

DSL modem DSL stands for digital subscriber line. A DSL modem uses your existing phone lines to send and receive data at high speeds.

Encryption A method for providing a level of security to wireless data transmissions. The OfficeConnect Cable/DSL Gateway and Wireless Cable/DSL Gateway uses two levels of encryption; 40/64 bit and 128 bit. 128 bit is a more powerful level of encryption than 40/64 bit.

ESSID Extended Service Set Identifier. The ESSID is a unique identifier for your wireless network. You must have the same ESSID entered into the gateway and each of it's wireless clients.

Ethernet A LAN specification developed jointly by Xerox, Intel and Digital Equipment Corporation. Ethernet networks use CSMA/CD to transmit packets at a rate of 10 Mbps over a variety of cables.

Ethernet Address See MAC address.

Fast Ethernet An Ethernet system that is designed to operate at 100 Mbps.

Firewall Electronic protection that prevents anyone outside of your network from seeing your files or damaging your computers.

Full Duplex A system that allows packets to be transmitted and received at the same time and, in effect, doubles the potential throughput of a link.

Gateway A device that acts as a central hub by connecting to each computer's network interface card and managing the data traffic between the local network and the Internet.

Half Duplex A system that allows packets to transmitted and received, but not at the same time. Contrast with full duplex.

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Hub A device that regenerates LAN traffic so that the transmission distance of that signal can be extended. Hubs are similar to repeaters, in that they connect LANs of the same type; however they connect more LANs than a repeater and are generally more sophisticated.

IEEE Institute of Electrical and Electronics Engineers. This American organization was founded in 1963 and sets standards for computers and communications.

IETF Internet Engineering Task Force. An organization responsible for providing engineering solutions for TCP/IP networks. In the network management area, this group is responsible for the development of the SNMP protocol.

Infrastructure mode Infrastructure mode is the wireless configuration supported by the Gateway. You will need to ensure all of your clients are set up to use infrastructure mode in order for them to communicate with the Access Point built into your Gateway. (see also Ad Hoc mode)

IP Internet Protocol. IP is a layer 3 network protocol that is the standard for sending data through a network. IP is part of the TCP/IP set of protocols that describe the routing of packets to addressed devices. An IP address consists of 32 bits divided into two or three fields: a network number and a host number or a network number, a subnet number, and a host number.

IP Address Internet Protocol Address. A unique identifier for a device attached to a network using TCP/IP. The address is written as four octets separated with periods (full-stops), and is made up of a network section, an optional subnet section and a host section.

ISP Internet Service Provider. An ISP is a business that provides connectivity to the Internet for individuals and other businesses or organizations.

LAN Local Area Network. A network of end stations (such as PCs, printers, servers) and network devices (hubs and switches) that cover a relatively small geographic area (usually not larger than a floor or building). LANs are characterized by high transmission speeds over short distances (up to 1000 metres).

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MAC Media Access Control. A protocol specified by the IEEE for determining which devices have access to a network at any one time.

MAC Address Media Access Control Address. Also called the hardware or physical address. A layer 2 address associated with a particular network device. Most devices that connect to a LAN have a MAC address assigned to them as they are used to identify other devices in a network. MAC addresses are 6 bytes long.

NAT Network Address Translation. NAT enables all the computers on your network to share one IP address. The NAT capability of the Gateway allows you to access the Internet from any computer on your home network without having to purchase more IP addresses from your ISP.

Network A Network is a collection of computers and other computer equipment that are connected for the purpose of exchanging information or sharing resources. Networks vary in size, some are within a single room, others span continents.

Network Interface Card (NIC) A circuit board installed into a piece of computing equipment, for example, a computer, that enables you to connect it to the network. A NIC is also known as an adapter or adapter card.

Protocol A set of rules for communication between devices on a network. The rules dictate format, timing, sequencing and error control.

PPPoE Point-to-Point Protocol over Ethernet. Point-to-Point Protocol is a method of data transmission originally created for dial-up connections; PPPoE is for Ethernet connections.

PPTP Point-to-Point Tunneling Protocol is a method of secure data transmission between two remote sites over the internet.

RJ-45 A standard connector used to connect Ethernet networks. The "RJ" stands for "registered jack".

Server A computer in a network that is shared by multiple end stations. Servers provide end stations with access to shared network services such as computer files and printer queues.

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SSID Service Set Identifier. Some vendors of wireless products use SSID interchangeably with ESSID.

Subnet Address An extension of the IP addressing scheme that allows a site to use a single IP network address for multiple physical networks.

Subnet mask A subnet mask, which may be a part of the TCP/IP information provided by your ISP, is a set of four numbers configured like an IP address. It is used to create IP address numbers used only within a particular network (as opposed to valid IP address numbers recognized by the Internet, which must assigned by InterNIC).

Subnets A network that is a component of a larger network.

Switch A device that interconnects several LANs to form a single logical LAN that comprises of several LAN segments. Switches are similar to bridges, in that they connect LANs of a different type; however they connect more LANs than a bridge and are generally more sophisticated.

TCP/IP Transmission Control Protocol/Internet Protocol. This is the name for two of the most well-known protocols developed for the interconnection of networks. Originally a UNIX standard, TCP/IP is now supported on almost all platforms, and is the protocol of the Internet.

TCP relates to the content of the data travelling through a network — ensuring that the information sent arrives in one piece when it reaches its destination. IP relates to the address of the end station to which data is being sent, as well as the address of the destination network.

Traffic The movement of data packets on a network.

universal plug and play Universal plug and play is a system which allows compatible applications to read some of their settings from the Gateway. This allows them to automatically configure some, or all, of their settings and need less user configuration.

URL Filter A URL Filter is a feature of a firewall that allows it to stop its clients form browsing inappropriate Web sites.

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WAN Wide Area Network. A network that connects computers located in geographically separate areas (for example, different buildings, cities, or countries). The Internet is an example of a wide area network.

WECA Wireless Ethernet Compatibility Alliance. An industry group formed to certify cross vendor interoperability and compatibility of 802.11b and 802.11g wireless networking products and to promote the standard for enterprise, small business and home environments. (see also 802.11b, 802.11g, Wi-Fi)

WEP Wired Equivalent Privacy. A shared key encryption mechanism for wireless networking. Encryption strength is 40/64 bit or 128 bit.

Wi-Fi Wireless Fidelity. This is the certification granted by WECA to products that meet their interoperability criteria. (see also 802.11b, WECA)

Wireless Client The term used to describe a desktop or mobile PC that is wirelessly connected to your wireless network

Wireless LAN Service Area Another term for ESSID (Extended Service Set Identifier)

Wizard A Windows application that automates a procedure such as installation or configuration.

WLAN Wireless Local Area Network. A WLAN is a group of computers and devices connected together by wireless in a relatively small area (such as a house or office).

WPA Wi-Fi Protected Access. A dynamically changing encryption mechanism for wireless networking. Encryption strength is 256 bit.

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Regulatory Notices for the Wireless 11g Cable/DSL Gateway

Channels

Use of the Wireless Cable/DSL Gateway is only authorized for the channels approved by each country. For proper installation, login to the management interface and select your country from the drop down list. Table 5 below details the channels permitted by the local regulatory agencies:

Table 5 Channels

Channels	Country
1 - 13	Australia, Austria, Bahrain, Belarus, Belgium, Chile, China, Costa Rica, Croatia, Cyprus, Czech Republic, Denmark, Finland, France*, Germany, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Italy, Liechtenstein, Lithuania, Luxembourg, Malaysia, Netherlands, New Zealand, Norway, Paraguay, Peru, Philippines, Poland, Portugal, Russia, Saudi Arabia, Singapore, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom, Uruguay, Venezuela.
1 - 11	Argentina, Brazil, Canada, Columbia, Mexico, Taiwan, United States
10 - 13	France*, Jordan
5 - 7	Israel
1-14	Japan

* The channels available for use in France depend on the region in which you are located.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules, and the Canadian Department of Communications Equipment Standards entitled, "Digital Apparatus," ICES-003. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio

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frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

Information to the User

If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.
- Move the equipment away from the receiver.
- Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.
- Consult the dealer or an experienced radio/television technician for help.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

How to Identify and Resolve Radio-TV Interference Problems

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4. In order to meet FCC emissions limits, this equipment must be used only with cables which comply with IEEE 802.3.

FCC Declaration of Conformity

We declare under our sole responsibility that the

Model:	**Description:**
3CRWE554G72	Wireless 11g Cable/DSL Gateway

to which this declaration relates, is in conformity with the following standards or other normative documents:

- ANSI C63.4-1992 Methods of Measurement

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- Federal Communications Commission 47 CFR Part 15, subpart B
  15.107 (a)Class B Conducted Limits
  15.109 (a)Class B Radiated Emissions Limits
- 15.107 (e)Class B Conducted Limits
  15.109 (g)Class B Radiated Emissions Limits

Exposure to Radio Frequency Radiation: The radiated output power of the 3Com OfficeConnect Wireless Cable/DSL Gateway is far below the FCC radio frequency exposure limits. Nevertheless, the 3Com OfficeConnect Wireless Cable/DSL Gateway shall be used in such manner that the potential for human contact during normal operation is minimized. The distance between the antennas and the user should not be less than 20 cm.

CE Statement (Europe)

This product complies with the European Low Voltage Directive 73/23/EEC, EMC Directive 89/336/EEC as amended by European Directive 93/68/EEC and the Radio and Telecommunications Terminal Equipment Directive 99/5/EC.

CSA Statement

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

BSMI Statement

警告使用者：這是甲類的資訊產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

FCC

CAUTION: *To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.*

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RF Exposure Compliance Statement (U.S.)

***CAUTION**: The 3Com OfficeConnect Wireless Cable/DSL Gateway has been certified as a mobile computing device as per FCC Section 2.1091. In order to comply with the FCC RF exposure requirements, the 3Com OfficeConnect Wireless Cable/DSL Gateway must only be installed with approved antennas and a minimum separation distance of 20 cm (8 in) must be maintained from the antenna to any nearby persons.*

Potential RF Interference (Canada)

***CAUTION**: To prevent radio interference to the licensed service, this device is intended to be operated indoors and away from windows to provide maximum shielding. Equipment (or it's transmit antenna) that is installed outdoors is subject to licensing.*

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